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The Back Seat Driver in INFANT FEEDING

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PERCY TODD PHILLIPS

President California Medical Association

1927-1928

CALIFORNIA
AND
WESTERN MEDICINE

VOLUME XXVIII MAY, 1928 No. 5

NARCOTICS

By PERCY T. PHILLIPS, M. D.
Santa Cruz

PRESIDENTIAL ADDRESS, CALIFORNIA MEDICAL ASSOCIATION, FIFTY-SEVENTH ANNUAL SESSION

BLACKSTONE said: "If man were to live in a state of nature, unconnected with other individuals, there would be no occasion for any other laws than the law of nature and the law of God."

It is certainly an innovation to preface an address before a State Medical Association with a quotation from Blackstone's Commentaries. As an introduction to what I hope will be a practical discussion of narcotics, and the laws now governing their use in California, it is desirable to start with the philosophy of all law.

Not to perplex the law of nature with a multitude of abstracted rules and precepts as to the fitness or unfitness of things, the rule of obedience is reduced to this one paternal precept, "that man should pursue his own true and substantial happiness." This is the foundation of what we call ethics or natural law. This law of nature dictated by God himself is, of course, superior in obligation to any other. Human laws, to be reasonable and valid, must derive their authority from this source.

NARCOTICS POWER FOR GOOD AND EVIL

"That man should pursue his own true and substantial happiness," our government has found it necessary from time to time to enact special codes regulating the use of God's gifts to mankind that humanity in its ignorance and carelessness abuses. There is no more outstanding example than opium —and other narcotics—one of God's great blessings, but capable, if not properly used, of being man's greatest curse.

I shall not discuss the physiological action of or the therapeutical indications for narcotics, but shall emphasize only their dual results. We shall take opium with its derivatives as an example. No single medicinal agent has been so useful and none more destructive. We can all count the lives actually and definitely saved by its use in our hands—the case of extreme surgical shock where only morphin could defend the vital nerve centers: the one of severe inflammation of some internal organ that only morphin could put to rest and thereby save from destruction. Probably its greatest blessing is in the case of incurable disease with its intense and continued suffering, worse than death itself, which only by the use of opiates is made endurable while life lasts. These are outstanding examples; there are many others.

On the other hand we count the wrecks of both body and soul that have come under our observation. Let us recall to our minds an incident that is repeated many times in the professional lives of us all. A man, once proud and independent, endowed with all the mental and physical attributes to make him a leader among men, but now a pitiable creature without pride or confidence, comes to our office asking for a few grains of morphin. At first he brazenly lies to us about some serious physical ailment necessitating its use. When we refuse his demands and accuse him of addiction and ask him to tell us his true story, he sits down and relates the incidents along one of the many paths, familiar to us all, that has led him to a condition which places him, if he can obtain the drug, for a time in the seventh heaven, or without it, plunges him into the depths of hell. In either condition his moral sense and responsibility are gone, his physical powers are depleted, and he is but a menace to, as well as a burden on the body politic. As we shall see, a big percentage of all crimes against God's and nature's laws, as well as against those special codes promulgated by our state for our comfort and protection, are traceable to the abuse of narcotics.

The problem of narcotics is logically one for the medical profession. We must strive to develop their power for good and suppress their power for evil. While those in authority administer such restraints as are imposed, it is our province to recommend the best laws and best means to control their use and abuse. This is our duty to the commonwealth because we have intimate knowledge of the legitimate use of narcotics, as well as experience based on the care of those who are its addicts.

We are accused in some cases of causing addiction by unnecessary or careless prescribing. While there are instances of addiction following the imperative prescribing of narcotics, they are so rare as to be practically negligible. We cannot know when we are saving a life with morphin that the particular individual is so constituted that he lacks the control a normal person inherently possesses. The contempt of one's confrères for a physician who would needlessly or carelessly expose a patient to addiction is so profound that no physician, unless he has fallen from every ideal of medical service, would face its wrath. After all few physicians in the face of mankind's constant need can fail to ask themselves, "Am I not always my brother's keeper?"

HISTORY OF ADDICTION

Narcotic addiction is not a new problem. The use of the cocoa leaf, Indian hemp, and the juice of the poppy, goes back to the beginning of history. Webster gives the derivation of the word

"assassin" as from hashish, or one who has drunk of the hashish, a narcotic preparation made from hemp. Modern civilization has made narcotic drugs both its blessing and its curse.

As far back as we go in recorded history, the evil resulting from the use of narcotics has been recognized. In 1788 a great Englishman, Warren Hastings, declared opium to be "a pernicious article of luxury, which ought not to be permitted but for the purpose of foreign commerce only."

Three decades later the directors of the East Indian Company went on record as saying: "If it were possible to prevent the use of the drug altogether, except strictly for the purpose of medicine, we would gladly do it in compassion to mankind."

As a result of the opium war, England opened the doors of China to the opium traffic and levied an indemnity of six millions of dollars for opium which the Chinese had seized and destroyed. This was followed by an awakening of the conscience of the English people which was again lulled to sleep by the cleverly contrived report of the Royal Commission of 1893. Naturally, after spending months in hearing the evidence and opinions of the merchants engaged in the opium traffic, they found much good and little harm in the use of narcotics by Orientals.

The United States came into the picture through the interest taken in the problem by the late President Roosevelt. This led to the International Conference, held at The Hague in 1912. Sixteen years have passed since the countries represented at The Hague conference agreed to limit the manufacture, sale, and use of narcotic drugs to legitimate purposes, years filled with long speeches and pious platitudes, smoke-screens and camouflage, years marked by a steady increase in the production and illegal use of narcotics, years which saw constantly augmented forces in the unholy army of smugglers, drug peddlers, and addicts. The great powers have given their word. They have signed treaties. They have adopted laws and regulations. Why have they failed? There are at most not over fifty drug factories throughout the world. Why have these not been controlled? The answer is simple. Some of these sovereign nations have failed in observing the provisions of the treaties and in administering their laws and regulations.

We of America must protect ourselves from this unholy traffic. We must no longer look to foreign powers to protect us. These countries in whom a part of their population has not as yet realized the evils of addiction and whose vision is obscured by the fact that an appreciable part of their revenue is still from traffic in narcotics offer us little security. We must depend upon ourselves.

We of California must protect our state and its citizens. We must not lay too much of the burden upon our Federal officials. We must realize our own responsibilities and our own obligations.

DEMAND AND SUPPLY

Our narcotic problem can be broadly divided into two parts, that of the demand and the supply—the buyer and the seller. Let us consider first the supply. Both the Federal and state governments concern themselves with this half of the problem. The Harrison Narcotic Act and Drug Imports and Exports Act have furnished our Federal narcotic officials with powerful weapons with which to combat the traffic, and it is largely due to these laws and the faithful and efficient enforcement of them that the number of our addicts has decreased to approximately one hundred thousand throughout the United States.

The State of California has lent powerful aid to the Federal government through the drastic laws aimed at the peddler passed at the last two sessions of our legislature. In 1925 the penalty for illegal possession of narcotic drugs was increased from ninety days in jail or $200 fine to six years in state's prison for the first offense and ten years for the second offense. This drastic law has resulted in the elimination of a largely increased number of peddlers who, under the old law, escaped with a fine which virtually amounted to a license.

In accordance with Senate Concurrent Resolution No. 22 of the 1925 Legislature, a State Narcotic Committee was appointed to make a thorough and exhaustive study into the use and abuse of narcotic drugs in California and to recommend measures for the treatment and rehabilitation of drug addicts. This exhaustive and well-written report was published in the fall of 1926.

CALIFORNIA LAWS REVISED TO CONTROL TRAFFIC

As a result of this report with its recommendations, various new laws and amendments to those already existing were passed by the 1927 Legislature, aimed at the drug peddler and illegal trafficker. It has been stated by an official in the Federal Narcotic Division at Washington that California now has the best narcotic laws dealing with the illegal traffic of any state in the union.

One of these changes in the statutes, made by recent legislation, is of such special interest to physicians that it justifies a brief discussion. Ambulatory treatment for addiction is now positively prohibited. Should a physician furnish an addict, except there be pathology, narcotics in any amount except in a jail, county hospital or other institution approved by the Board of Medical Examiners for the treatment of addicts, he is subject to arrest and conviction with a severe penalty. Furthermore he may be cited forthwith to appear before the Board of Medical Examiners and show cause why his license should not be revoked. In the past, revocation of license for the violation of state and Federal narcotic law as a crime involving moral turpitude depended upon conviction in the courts. Now, the board, independent of court action, on complaint must cite a physician and revoke or suspend his license on the fact being established that he has furnished an addict narcotics. The board may revoke or suspend his license even should a court find him not guilty, if, in the board's judgment, the evidence presented justifies the belief that he is an unsafe practitioner.

There is one other provision of the law which

we must not forget. That is the reporting of so-called medical addicts. There are those who, through the infirmities of old age or incurable disease, must use narcotics continuously, and it is our duty to furnish them. We must, however, report each case to the Board of Pharmacy on a complete questionnaire. This includes the name, address, disease suffered, amount of narcotic prescribed, etc. This provision of the law seems to conflict with the age-old principle in law of privileged communication. Inasmuch as these reports become public documents, no procedure on the part of the Board of Pharmacy can protect them from inspection by any citizen who can show reasonable cause. Confidential relationship prevails in all professions and in none should it be more strictly adhered to than in ours. I do not know that the question of conflict has ever been raised. Should it be, it is a question for the courts to decide. We can readily see the reason for this provision and its desirability from the standpoint of narcotic enforcement. Its justification is contained in the following quotation from California jurisprudence: "It is within the general power of a government to preserve and promote the public welfare even at the expense of private rights." This power is made effective through the exercise of what is generally known as "police power." "The police power, deriving its existence from the rule that the safety of the people is the supreme law, justifies legislation upon matters pertaining to the public welfare, the public health or the public morals." Probably since the need is so great the law is justifiable and we should do our part in administering it.

The State Poison Act, as amended, provides for a Narcotic Division with a Director thereof. This wise provision appeals to the medical profession inasmuch as in all their duties and relations under this act the physicians will be dealing with one having special knowledge of the subject and thus better able to understand our problems in relation to the use of narcotics.

CALIFORNIA LAWS TO CONTROL ADDICT

What has California done with regard to the second part of the problem—the buyer, the drug addict? The Federal government refuses to concern itself with this important part of the question, claiming it is the responsibility of the states. Various congressmen have tried in vain to enact laws requiring the Federal government to assume responsibility in the care and treatment of addicts, but without success. At the session preceding the last session of Congress, Senator Shortridge introduced S. B. 1800, a bill which would require the Federal government to extend financial aid to worthy state narcotic institutions, but it failed.

At this session Congressman Porter of Pennsylvania has introduced a bill providing for the creation of two Federal narcotic farms for the confinement and treatment of addicts sentenced to our Federal penitentiaries. The separation of addicts from all other prisoners is a step in the right direction and may lead to a reversal of the present policy that the care and treatment of the drug addict is the business of the individual states and not of the Federal government.

Some years ago California passed a law permitting drug addicts to be sent to our state hospitals for treatment and cure. This experiment was a dismal failure. The mixing of unrestrained addicts with the mentally sick had an unfortunate effect on the patients, and the liberty allowed the addicts made it easy for them to continue to get narcotics. In the last report issued by the Department of Institutions, on page 118, we read that out of 295 drug addicts received for treatment in 1925 and 1926, only seven, or less than 3 per cent were discharged as cured. What happened to the others? A few died, 117, or 40 per cent, of them ran away, and the balance were discharged with the report "further treatment not beneficial."

In California today, the unfortunate addict who is without financial means has only two alternatives to choose from—the streets or the jails. The last session of the Legislature did pass a Narcotic Hospital law; a compromise in the sense that it falls between the present state hospital system which has proved such an utter failure and that excellent plan reported by the State Narcotic Committee and approved by the California Medical Association in convention at Oakland in 1926 in the following resolution:

"Resolved, That a plan which provides commitment of addicts after fair trial, to a farm from which escape can be made impossible, and which affords enlightened care, hospital cure, and work treatment, or other plans similar, equal or better, and under control of the California State Board of Health, meets with the approval of the California Medical Association."

The salient defects in the hospitalization law are: first, the Director of Institutions, a layman, with the approval of the State Board of Control, composed entirely of laymen, has complete control, and no physician has any authority, either direct or advisory unless a Medical Superintendent is provided; second, it is proposed to utilize the abandoned Pacific Colony building, located on the outskirts of Pomona, an accessible location too close to populous centers and very convenient for the drug peddlers; third, the plan provides for only fifty addicts in spite of the fact that we have some four thousand in the state; fourth, the bill provides no appropriation of money with which to carry out even its meager provisions and therefore practically vitiates its purpose.

The choice of location and the necessity of limiting the number of patients undoubtedly arose from the lack of sufficient appropriation.

The value of this proposed plan will depend on establishing a scientific organization with a competent medical staff that will study the pathological and psychological aspect of drug addiction, thereby collecting a fund of recorded facts of inestimable value in making its cure permanent.

Let me say that I respect and appreciate the motive and desire for service behind this act. It is an entering wedge and I hope and believe it will be so amended as to become of practical value.

California has today, according to our most authentic records, from 3500 to 4000 addicts. A census taken in the fall of 1926 shows some 1300

California addicts in jails, prisons, penitentiaries and institutions. They are going in and coming out at a nearly uniform rate. We have probably from 2500 to 3000 of the criminal or street type of addicts who gain their living and the money necessary for the purchase of the drug by begging, stealing, drug peddling, or other illegal methods. The Federal Narcotic Division at Washington estimates that the average quantity of morphin used by addicts is from six to seven and a half grains per day. The usual price in California for morphin is one dollar per grain. Therefore it costs the street addict on the average, approximately six dollars a day to maintain his addiction, and this is in addition to the necessities of life.

In the past few years we have heard much disturbing criticism leveled at the young people of our land. Emotional and superficial students of social conditions frequently include in their charges against the high school group of pupils an increasing use of narcotics. This widespread belief is far from the facts. The existence of such a condition is refuted by the investigation and report of the narcotic committee of the Commonwealth Club of San Francisco in 1926. If the findings of such a committee were not conclusive, the common sense of any citizen would recognize the impossibility of high school pupils maintaining without detection the cost of a six-dollar-a-day addiction.

The drug addict is one of the chief factors in our crime situation according to Dr. Carleton Simon, formerly Deputy Police Commissioner in charge of the narcotic division in New York City. Their reports show that of eight thousand addicts arrested in a given period, over 80 per cent were found to have previous criminal records. Francis J. Dunn of Philadelphia states that 85 per cent of their addicts have criminal records. Chief of Police O'Brien of San Francisco reports that the narcotic menace is the greatest problem that the police and other law-enforcing officers have to battle with at the present time. Chief of Police Davis of Los Angeles states that a large share of the crime committed in Los Angeles is due to drug addiction.

It is estimated by the State Narcotic Committee that the amount of money spent for narcotics by our criminal addicts alone varies from four to seven millions of dollars a year in California. This does not take into account the indirect cost of crime—the strain on our courts, jails, and institutions. Doctor Simon has records of 741 addicts who were arrested 5056 times and of 8174 addicts who were arrested 32,696 times. This gives us an idea of the appalling indirect cost of drug addiction to society and does not count the added cost through the waste of human production and the destruction and loss of man power.

SOURCE OF SMUGGLED NARCOTICS

Where do smuggled narcotics come from and what is the favorite drug of addiction?

Throughout the entire world there exist not over fifty drug factories, and they produce probably one hundred times the amount of narcotic drugs required for medicinal purposes. They are smuggled in through the Atlantic and Pacific seaboards and over the Mexican and Canadian borders. At present "the white stuff," as it is called, is coming largely from New York, and opium from the northern seaports. An analysis of the different drugs seized by our narcotic officials shows that morphin is the favorite drug of addiction in California, being captured in 86 per cent of the cases in northern California, and in a smaller percent of the cases in southern California. The large use of marihuana by Mexicans in southern California being responsible for the decrease in the percentage of morphin. Heroin, opium, and cocain were seized in a much smaller percentage of cases. The morphin captured is, in almost every case, morphin hydrochlorid, whereas the morphin manufactured by our American drug factories, carried in stock by pharmacists and prescribed by physicians, is morphin sulphate. This is conclusive refutation of the charge frequently made by those uninformed that there is a leakage of drugs from our American factories through corruption or inefficient supervision of our officials. We have every reason to believe that our smuggled drugs come, in every instance, from unscrupulous foreign factories which are interested only in the large profits made in this vicious commerce.

DENARCOTIZATION

During the past year so-called cures for drug addiction were widely heralded and discussed by the press, and many credulous people were led to believe that at last our narcotic problem had been solved. It was claimed that an addict could be cured of his addiction within a few days or weeks.

A public demonstration of one of these cures was given in San Francisco and what was the result? Thirty-six addicts were given treatments, successfully taken off the drug, and pronounced cured. Recently one of our narcotic officials undertook a check on the cured addicts. He could find only sixteen of them; the others had disappeared from San Francisco. Of the sixteen found, how many do you think had become re-addicted? Sixteen! Sixteen out of sixteen, that is the answer.

It is the same old story because that is not our narcotic problem at all. Every doctor and every institution has always succeeded in taking addicts off the drug, in denarcotizing them successfully. Even in jails where they let them "kick it out" or give them the "cold turkey treatment" they get results in nearly every case, but after that, what?

The so-called cured addict is turned out or discharged from jail and goes back to his old associates, to the old conditions which were responsible for his addiction in the beginning, to the old temptations, to the peddler who eagerly seeks to increase his trade, to the addict friend who sympathetically offers him a shot. Naturally, inevitably, sixteen out of sixteen went back to the drug.

REHABILITATION

At this point, after denarcotization, our real problem begins; the rehabilitation of the addict, curing the mind, the imagination. We have taken

away the chief thing in his life and given him nothing to take its place. Rehabilitation will take not days or weeks, but years. In a recent statement the British Ministry of Health says: "A lasting cure could not be claimed unless the addict had remained free from his craving for a considerable period—from one and one-half to three years after the final withdrawal of the drug."

In order to effect a cure of the addict, we must have him under absolute control for a long period of time. He must be completely isolated from his old life and associations, and some mental or physical occupation must take the place of the drug. This does not mean isolation by means of stone walls and iron bars. It means a normal out-of-door life, with sunshine, work and recreation.

The solution of this problem does not mean merely the cure of those addicted at present. It has a much wider scope. What are we doing to prevent the spread of leprosy? We segregate and isolate the lepers who are now at liberty on our streets. That is precisely what we must do with our addicts. Our late Doctor Musgrave frequently said that "Drug addiction is ten times as dangerous and ten times as contagious as leprosy," meaning, of course, contagion not physically but mentally through association.

The segregation and isolation of our addicts will not only prevent the present spread of drug addiction through association; it will do much more than that. It will destroy the demand for the drug. It will put the peddler out of business more effectively than a thousand narcotic agents. If it does not actually end the drug traffic in California it will reduce it to the irreducible minimum. The attempt to handle the situation by placing addicts in state hospitals, centers of large groups of people, always has failed and always will fail because complete isolation is impossible of attainment. Ideal locations for a state addict farm can be found in our California deserts or islands.

The complete isolation of not only a few but of all the addicts who can be found offers the only possible solution of this great social problem. There is no other way. We cannot depend upon foreign countries to protect us at an enormous financial sacrifice to themselves; we must protect ourselves. Federal, state and city narcotic officers have done their best to stamp out the smuggling of the drug into our country. With our thousands of miles of seacoast and Mexican and Canadian boundaries, they have failed, and I predict that the future will be a repetition of the past and present. They will always fail to prevent a large quantity of narcotics from being smuggled in, finding its way to our street peddlers and to our addicts who must have their daily dosage and will pay any price demanded for it.

There is no other way. We must segregate and isolate all the addicts who are now on our streets, creating the demand for the drug, paying the enormous profits exacted by peddlers, and, through association, spreading and increasing addiction among oncoming generations.

NARCOTIC PROBLEM A MEDICAL PROBLEM

The narcotic problem is partially, if not largely, a medical problem, and our profession has failed to realize and admit its obligation. We have left it too long to others; it is time to assume our share of the responsibility in the solution of this grave social problem.

It is not only a scientific and economic subject but a moral one as well. I wish to repeat; from a logical standpoint the medical profession should be more concerned than any other profession or class.

The profession of medicine is a structure with foundation laid deeply, with walls thick and strong, towering over other professions in its onward and upward building toward progress. It is a monument to the persevering efforts of the family doctor of early years; a castle to the modern physician, and it still stands stable and secure. It has been built and rebuilt and renovated, and each new triumph of the profession in its war on disease is its added illumination to be guarded as a beacon light which guides the younger physicians and lights their way to greater scientific efforts and warns them to keep intact our ideals and traditions.

"That man should pursue his own true and substantial happiness" there must be many civic as well as individual problems within the body politic. Let us as individuals and as a profession continue, as in the past, to give thought with service to all the problems of mankind.

Let us not forget that it has not been by scientific attainment alone that this structure has been erected. Wtih science have ever been morality, integrity, and service. A service ready to give battle not only for health, but for that righteousness that exalteth a nation.

Farmers and Merchants Bank Building.

STATISTICAL STUDIES AND MEDICAL EFFICIENCY*

By CHARLES EATON PHILLIPS, M. D.
Los Angeles

MEMBERS of the Surgical Section, California Medical Association, and Guests: You who have each achieved distinction in some department of surgery, who have so liberally contributed to its progress and scientific advancement, to you I desire to present a most serious problem.

Medicine as a science has made phenomenal advancement, yet its average application in surgery has shown a progressive loss.

Two years ago Dr. Willis of Richmond read a paper before the American College of Surgeons in which he quoted statistics showing that in the past two decades there had been a steady increase in the mortality rate attending many of the common surgical procedures. He showed that the mortality rate attending goiter operations had increased 250 per cent; operation mortality for gall

*Chairman's address, General Surgery Section, at Fifty-Seventh Annual Session of the California Medical Association, April 30 to May 3, 1928.

stones had increased 77 per cent; duodenal and gastric ulcers operation mortality had increased 72 per cent, and that for appendicitis had increased 31 per cent. Any doubt that might linger in one's mind should be dispelled by the figures later compiled by Carr and Deacon on "Appendicitis in Michigan." These studies show that the death rate varies considerably in different parts of the state. To quote: "In some counties no deaths occurred. In others it varies from 1 per cent and over. In only eight counties was it less than 5 per cent; in eleven it was between 5 and 10 per cent; in sixteen, between 10 and 14 per cent; in seventeen, between 14 and 18 per cent; and in ten, between 18 and 21 per cent. In ten it was 21 per cent or more." Compare these results, if you please, with those of Quain and Waldschmidt,[1] who report a thousand consecutive cases with a mortality of only 1.55 per cent, or with Tuttle's[2] summary of our work in Panama covering a period of nearly twenty years and comprising 3265 cases with a total mortality rate of 1.4 per cent. These two series totaling well over 4000 cases with an average mortality of less than 1.5 per cent may be taken as representative of the legitimate mortality attending the better class of surgery. Contrast these results with the approximately 15 per cent in an average state as analyzed by Carr and Deacon. The difference of 1000 per cent between the average and the good is too great. An analysis of the situation shows the difference is due to the degrees of professional ability. The constantly increasing volume of indifferent surgery is without question responsible for the rising mortality rate. The explanation is obvious. Where one practiced surgery twenty years ago, one hundred are endeavoring to do it now. In other words, the surgery of two decades ago was performed by comparatively few men. In spite of their lack of opportunity for study and observation, and the imperfections of hospitals and equipment, their results averaged better than those of today. These men were pioneers in this work and kept a close record of their results.

We unfortunately are accustomed to reckon the progress of medicine and surgery by the advancement made in a few of the well-known institutions.

The business man who reckons his yearly profits by a few fortunate transactions, without taking heed of the law of averages, is certain of final losses or even bankruptcy.

Because the profit in our transactions is computed in human lives saved, should not make the effect less worthy than if it were figured in dollars and cents.

We fail to recognize the fact that the volume of surgery is no longer performed by a few men, but at present it is practiced by a majority of doctors, and not even limited to doctors of medicine.

In the better class of hospitals a superior grade of surgery is being done to that of a decade or two ago. Because of the great influx of inexperienced and otherwise untrained men, a large amount of the surgery of today is performed by the unskilled. The amount of this work more than offsets the improvement effected by the efficient. The result is a steady deterioration of the general average.

This state of affairs has come about at the same time that marked improvement was achieved in the training of the young surgeon as well as in the facilities with which he has to work. The founders of the American College of Surgeons had in mind, in the formation of this great organization, the general benefit to the practice of surgery. The campaign of hospital betterment and standardization has been carried out with the same motive in view. The amount of good these agencies have accomplished cannot be estimated. The weakness of our system of healing lies in the fact that we have provided no sufficient protection against the incompetent and careless. While the representatives of this class are chiefly to be found outside of the regular profession the patient has too little means of determining this fact. The ability of a prospective surgeon is too frequently judged by his own unsupported statements. Whatever the doctor may lack in professional ability he can make up in imagination and by superior salesmanship—even rebates are not unknown!

In my opinion the most logical solution is to keep an accurate, unbiased record of each doctor's work and results. To render a maximum service to the patient as well as to the profession, the physician must know not only the results that follow his own endeavors, but he also must be familiar with the work and results of others.

The patient, whose health and life are at stake, should have an opportunity of knowing the doctor's actual experience and the success that has attended his previous work.

The method of collecting such data must be simple, efficient and economical. It should be done by the hospital and not by the individual physician. Many of our better hospitals are compiling their results by mechanical means, thereby insuring accuracy, economy and efficiency in their statistics. The efficiency of a hospital is no better than the average competency of its staff. Not over one per cent of the members of the profession keep an accurate, analytical record of their work. What per cent of the hospitals have made an adequate study of the individual results of its staff members? We know they are very few. Without individual statistics by the hospital and its staff there can be no collective data of value to the physician or to the patient, and it is with great reluctance that I must say that in this business of life and death practically no books are kept.

To compile results intelligently the individual cases must be classized. The surgical risk should be estimated. Dr. T. R. Ponton, formerly a representative of the American College of Surgeons, has arranged a simple classification of surgical

risks. This should be made in every case. For those who are not familiar with his classification, I will state he has divided surgical cases into three classes:

First: Elective surgical risks with a good, fair or bad prognosis.

Second: Emergency surgery, classified also as good, fair or bad risks.

Third: Palliative surgery, classified in a like manner.

A wise provision by the ideal hospital would be to require consultation before the contemplated operation in those cases where the patient's life is to be endangered. This provision would not necessarily be enforced in emergency work where the loss of time might be detrimental to the patient's chances of recovery. Such a procedure would not only safeguard the patient, but also the doctor in the eventuality of an unfortunate result.

The mechanical compilation of statistics enables each doctor to know his own results and also the average results of all others, but not the individual results of any save his own. The value of such records must be apparent to all. The worth of any surgical procedure could be determined promptly and in a convincing manner. Each would profit by the experiences of all.

An an example: Since an analysis of the work in the Los Angeles General Hospital has been made during the past two years, there has resulted a very marked stimulation of interest in their mortality showings and in the proportion of creditable results on the parts of the various surgeons. It seems only just that some form of recognition be accorded those institutions which require such an analysis of their work.

Compilation of vital statistics including all methods of treatment, show a steady deterioration of results. The better institutions have shown an improvement consistent with the advancement of medical science. This comparison constitutes the clinching argument against unpreparedness and quackery.

Financial institutions where only money is at stake are required to give a true statement of assets, liabilities, and the chance for gain to the prospective investor. Institutions of treating the sick are not surrounded by any such safeguards.

This has been the golden age of opportunity in medicine and we can do no more than pass to our successors a better organization than that we have received.

In conclusion, it is just that we exercise every precaution to safeguard the lives and welfare of the patients who trustingly place themselves in our care. To do this it is imperative that the physician know the results that follow his work.

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TUBERCULOUS CAVITIES—THEIR DIAGNOSIS BY THE ROENTGEN RAY*

By MERL L. PINDELL, M. D.
San Fernando

DISCUSSION *by Carl H. Parker, M.D., Pasadena; Charles G. Sutherland, M. D., Rochester, Minnesota; H. S. Hunsberger, M. D., San Francisco.*

CAVITY formation plays an important part in the progress and prognosis of pulmonary tuberculosis, and its early diagnosis is extremely important.

FORMATION OF CAVITIES

Some believe that the formation of a cavity depends in a good part on secondary infection with the various pus-producing organisms, but the recent exhaustive work of Medlar and Krause explodes this theory and shows that it is due entirely to the polymorphonuclear leukocytes in the reaction to the tubercle bacilli; and the presence of which is no indication of secondary infection. All tuberculous ulcers and cavities are formed in the same way, first, by the implantation of the tubercle bacilli; second, by the softening of a mass of cells with a separation from the surrounding tissues, then a rupture, usually near the center. The cavities may be pinhead in size or occupy a whole lobe or an entire lung. Cavities may have smooth, dry walls, or may be ragged and secreting. As a rule the more chronic a cavity the smoother its walls. A cavity may at one time contain secretion and at another time be empty. These various conditions necessarily produce different physical signs. All cavities of any size usually extend to the wall of a bronchus, which subsequently ulcerates and permits the evacuation of the liquefied contents. A cavity just beneath the visceral layer of pleura may perforate into the pleura cavity, producing an open or valvular pneumothorax.

SILENT CAVITIES

It is generally taught that the classical amphoric signs of cavities are distinctive only of the larger ones, whereas the great majority which are small do not betray their presence by abnormal physical signs. About 50 per cent of all tuberculous cavities, regardless of size, are silent, according to the conclusions of Bendove.

ROENTGEN RAY IN CAVITY DIAGNOSIS

There is perhaps no phase of tuberculosis upon which the roentgen ray has shed more light than on cavitation. The following quotation is taken from the July, 1926 issue of the *American Review of Tuberculosis,* from the Fitzsimmons General Hospital Medical Corps, United States Army, Denver, Colorado: "During the past four years annular shadows have been carefully studied. Cases of annular shadows that were diagnosed by the roentgen ray, but without physical signs, were reported by ward officers and were further studied and checked up, and almost invariably the existence of a cavity could be proven. Three hundred and seventy-five autopsies on tuberculosis subjects were studied. Three hundred and forty-nine had

* Read before the Radiology Section, California Medical Association, at its Fifty-Sixth Annual Meeting, April 25-28, 1927.

cavities demonstrated at autopsy; in all these signs of cavities were seen in the x-ray plates. Our pathologist found a few localized pneumothoraces, but the so-called pleura rings could never be found."

The article above referred to has been a revelation to me; it has helped to clear up several doubtful things, namely, pleural shadows, localized pneumothorax, and, of course, annular shadows in general. There are not enough articles of this kind that deal with so many autopsy checks.

The favorite site of infection with pulmonary tuberculosis is in the upper lobes, hence the prevalence of tuberculous cavities also in these regions. Here, too, fortunately these cavities are more easily demonstrated, owing to their superficial situation and are found quite commonly in early lesions, and of course when found, change the clinical classification from minimal to far advanced, thus changing the prognosis as well.

It is not uncommon, especially at the roots of the lungs, for the blood vessels and indurated and caseous lymph nodes to be so arranged as to simulate cavities in the x-ray examination. Cavities in this region are quite rare, however. A confusion between the cross-section of a bronchus and a cavity is possible only to the inexperienced. Sometimes annular shadows are indicative of a zone of demarcation about an infiltration, which infiltration will eventually result in a definite cavity, and these are sometimes difficult to diagnose at an early stage. But sooner or later the defect will become absorbed, converted into fibrosis, or show a definite wall of cavity formation. Small areas of rarefaction and small cavitation are sometimes very hard to diagnose, particularly when there is beginning fibrosis in an area of caseous tissue, the new connective tissue interweaving so as to closely resemble beginning cavitation and can only be differentiated by definite wall and punched-out appearance. The aspect of tuberculous cavities depends upon their age, location, and the pathological tissue in which they are found. They usually occur as more or less well-defined ring-shaped bands of increased density. Within the ring of increased density there is a field of markedly diminished density in most cases.

CLASSIFICATION OF CAVITIES

Several years ago Doctor Jaches of New York City gave me my first real lesson in the roentgen-ray diagnosis of chest conditions, and I shall quote freely from him, especially as regards classification of cavities. He describes three types of cavities, with minor modifications, which are due to the transition of one form into another.

The first type is the annular cavity, which is found especially in early tuberculosis and is the result of breaking down of the proliferative type of lesions, and in which caseation is not extreme. These early cavities are traversed by lung markings, and their favorite site is in the infraclavicular region near the axilla. The smallest cavities may be only a fraction of an inch in diameter or may attain the size of two or three inches. They usually are single and are often overlooked on physical examination because they are not surrounded by consolidated lung and do not communicate with bronchi and are, therefore, not transmitted to the surface of the chest.

The second type of cavity lies in a densely infiltrated lung in which it is formed by the rapid breaking down of caseous tissue. These have a punched-out appearance and often show a fluid level, and are usually surrounded by a well-defined wall which is composed of both fibrous tissue and adjacent consolidated lung. Like the cavities of the first variety these are more commonly seen in the upper lobes, but may be found in any portion of the lung where rapid breaking down of tissue is occurring. The cavities are of various sizes and shapes, depending on their location and the degree to which the fibrous wall is formed about them. In acute caseous cavities there is usually an irregular excavation with no evidence of a limiting membrane. On the other hand, if the patient survives, there is the formation of a capsule, which is generally circular in outline. With this progressive type of lesions it is not uncommon for a whole lobe or a whole lung to become excavated, as we have encountered in our institution in a few instances. These types may not have trabeculations in their walls, and, if air containing, closely resemble a localized pneumothorax. Many such, no doubt, have been diagnosed pneumothorax. In cavity formation there is usually a definite roughly circular wall and a slight amount of lung marking discernible, therefore these are not distinctive of pneumothorax. Peripheral compression is common, but localized pneumothorax is not so common. Cavities may be multilocular and assume bizarre shapes. Giant cavities are seldom seen with a fluid level, but in the punched-out variety a fluid level is frequently seen. It shows how complete a drainage we have in these cases and still at autopsy we saw in one case the openings into the bronchus exceedingly small and tortuous and only discernible by hunting with a small probe. I wonder if some of these have been called the closed type. Sometimes a cavity, owing to its deficient drainage, becomes full of fluid, excluding its punched-out appearance and making interpretation difficult, especially in a lung that has little infiltration. The history and the clinical aspect of the case will help to differentiate it from lung abscess.

The third type of cavity represents the terminal stages of cavities as just described, in which conservative influences limit its extent and attempts to encapsulate it. The indurative tendency of apical disease here manifests itself. We find cavities of moderate size surrounded by dense fibrous tissue and many dense adhesions and thickened pleura. The adhesions and thickened pleura prevent compression from artificial pneumothorax, but fortunately these kinds of cavities usually do not need compression. Patients who have these types of cavities have a fair degree of health. These are the patients upon whom a diagnosis of chronic bronchitis, bronchiectasis, or emphysema may be made. Their cavities are lined with

smooth, connective tissue, their expectoration may be slight, and may contain no tubercle bacilli.

SOLITARY CAVITIES AND POSTURAL DRAINAGE

The discovery of a cavity which lies in an apparently healthy lung is rather rare. We must assume that the infiltration which had previously been present was completely absorbed and that only the cavity remains. These cavities are very prone to become larger and show fluid level. We have seen quite a number and have tried postural drainage with fairly good results. Roentgen interpretations can be of aid to the clinician in these cases. If a cavity shows a persistent fluid level the drainage may be higher up in the cavity wall. Sometimes we observe a definite break in a rather thick-walled cavity, and we assume this is the favored point of drainage. A cavity in the upper lobe is more likely to have adequate natural drainage, and a cavity in the region of the hilum is in close relation to large bronchi and is likely to drain spontaneously. On the other hand, a cavity close to the periphery of the lung is in connection with only small terminal bronchi and can rarely be emptied satisfactorily by postural drainage. A lower lobe cavity usually drains best when the patient lies with the head down on the side opposite the lesion. Position of patient depends usually on chance relation that the cavity may bear to the bronchus with which it communicates. Multiple small cavities with thin walls may resemble bronchiectatic cavities and are sometimes very hard to diagnose. If these small cavities are found in the lower lobe or lower part of the lungs and there is a history of pneumonia, especially of repeated attacks and of abundant foul-smelling sputum, it is quite suggestive of bronchiectasis, which diagnosis is made more convincing if the patient has clubbed fingers and has had several negative sputums.

In some cavities, as in the saccular type, the roentgen ray gives a characteristic picture. These are honeycombed, spongy-appearing densities, which are usually acquired in childhood, following pneumonia. The installation of lipiodol will often clear up the diagnosis.

A patient on whom an autopsy was done had far advanced pulmonary tuberculosis and a tuberculous meningitis. Roentgen ray and physical findings indicated multiple small cavities in both upper lobes. The autopsy verified the diagnosis of tuberculosis, but instead of finding small cavities in both upper lobes, our pathologist found tubular bronchial dilatations, most of which were in the primary trunks. What was actually seen in the films were cross-sections of these dilated bronchi.

A considerable hindrance in the diagnosis of cavity formation is a thickened pleura, but usually if the pleura is not too thick or too general, a circular area of decreased density can be made out and a diagnosis established. Fluoroscoping and taking roentgenograms in different positions will be a great aid in such cases. If the obliteration is by fluid this can be aspirated and a diagnosis can then be made.

HEALING OF CAVITIES

A few years ago it was generally accepted that cavities of any size never healed. We now know differently. They heal and sometimes with great rapidity. In our institution with over six hundred patients we have found large cavities that have shrunk, changed shape and completely disappeared. The changing in shape and size, and the complete disappearance of annular shadows do not indicate that the shadow in question was not a cavity. Not long ago I attended a meeting where there was a discussion concerning a certain shadow that had disappeared, and the clinician came to the conclusion that it had not been a cavity. If it was not a cavity, what was it? Certainly not a localized pneumothorax, for it contained lung markings and had a definite circular wall. Pleural shadows of this character are so unusual that they should not be considered, and besides if it had been a pleural shadow, it would have persisted. The correct interpretation of such shadows plays an important part in the progress and treatment. There is no doubt that a few annular shadows are due to other causes, such as a wall of a lung abscess, tumors, cysts, interlobar pneumothoraces, tuberculosis of the bronchial lymph nodes, emphysematous blebs and bronchial dilatations.

CONCEALED CAVITIES

If there is a suspicion of a cavity and it is not revealed by the ordinary stereoscopic film, other positions should be used, such as the lateral, the lateral recumbent, and the right and left oblique. I have used the lateral recumbent position in demonstrating shifting fluid levels in cavities. Cavities that show an ill-defined or ragged capsule or a well-defined capsule with frequent fluid levels, have, as a rule a poor prognosis.

Knowing how essential it is to diagnose cavities early, we may be too hasty in making our diagnoses, but it seems better to err this way than the other. For this reason I usually report everything I think suggestive, and in that way we can at least be on our guard.

CONCLUSIONS

1. All sizes of cavities, irrespective of their location, are usually diagnosed promptly by the roentgen ray.

2. Cavities heal more frequently than was formerly thought to be the case.

3. Annular shadows demonstrated on films of tuberculous patients are practically always due to cavitation; therefore all annular shadows present on such films should be considered cavities until proven otherwise.

Olive View Sanatorium.

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DISCUSSION

CARL H. PARKER, M. D. (65 North Madison Avenue, Pasadena)—Doctor Pindell has done well to emphasize the importance of cavity formation in tuberculosis and the great value of the x-ray in the diagnosis of these cavities.

It is indeed fortunate that the procedure of artificial pneumothorax, together with x-ray studies, at once proves that a cavity exists and at the same time acts as the best sort of treatment of the condition. When a shadow is seen in the roentgenogram of a tuberculous patient which has the appearance of a cavity, it seems to me to be a logical procedure to introduce air into the pleural cavity, early in the progress of the process, rather than to wait for the uncertain physical signs of the thickened walls of a long-standing lesion. If this is done I believe that the healing of cavities will be much more often accomplished than it has been in the past and that the individual patients will be saved a long and trying invalidism.

As roentgenologists we should certainly be on the alert to recognize cavities at the earliest possible moment, because of their importance to the patient.

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CHARLES G. SUTHERLAND, M. D. (Mayo Clinic, Rochester, Minnesota)—As Doctor Pindell's paper suggests, there is a three-way chance of error in the diagnosis of tuberculous cavities; they may be overlooked or mistaken for other lesions, and other lesions and conditions may be mistaken for cavities. The cavity which lies in an area of consolidation or which is completely filled at the moment of examination is scarcely demonstrable. Small cavities and newly formed cavities which are often of irregular shape and without definite walls, easily escape observation. Multiple grouped cavities can be confounded with bronchiectasis as Doctor Pindell has said. Although strong arguments have been advanced to the contrary, present opinion inclines to the view that the so-called "subpleural pneumothoraces" are really cavities, as a rule. When diagnosis is attempted on a single film, it is often easy to visualize an apparent cavity by mistaking vascular markings, scar tissue, or a portion of a rib for the wall of a cavity, and the illusion is heightened if the included area is emphysematous and bright.

In the main, cavitation is a feature of advanced tuberculosis, and while cavities may occur relatively early and their discovery is important, it is still more important that the tuberculosis itself be diagnosed, whether cavities are demonstrable or not.

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H. S. HUNSBERGER, M. D. (870 Market Street, San Francisco)—Positive x-ray proof of lung cavities requires their demonstration as circular shadows in both the anterior and lateral projections. Less positive evidence is a stereoscopic image suggesting cavity in the anterior projection. An annular shadow plus a fluid level is practically conclusive evidence of cavity. Very many cavities are not susceptible of such positive demonstration. Cavities at the apices or in the upper part of the upper lobes cannot easily be shown in the lateral view; but annular shadows that might be considered pleural rings or localized pneumothoraces—and are sometimes so considered—can also be demonstrated in carefully taken lateral views in so many instances as to raise the question whether all annular shadows should not be considered cavities until proven otherwise. It is probable that they should.

Doctor Pindell has done a service by calling attention to the frequency of silent cavities. It sometimes happens that large annular shadows are shown in both views, demonstrating large cavities to the satisfaction of the roentgenologist, when there are absolutely no discoverable clinical signs. The clinician is sometimes inclined to doubt the presence of these cavities. In such cases the roentgenologist should stand his ground, fortified by the statements of Doctor Pindell and the autopsy statistics he has quoted from the Fitzsimmons General Hospital.

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DOCTOR PINDELL (closing)—I have used the lateral view in demonstrating cavities, as suggested by Doctor Hunsberger, and found it to be of value, but, as he has stated, "For cavities at the apices and in the upper part of the upper lobes, this position is not applicable." Therefore I consider the oblique views better when in doubt, as the greater percentage of cavities are in these regions.

Doctor Sutherland's point is well taken, when he says, "That on a single film we are likely to mistake vascular markings, scar tissue or the attachments of the anterior ribs for cavities." I usually avoid this error, for I seldom diagnose tuberculous cavities except by the stereoscope.

He also mentions "that, while the diagnosis of cavities is important, it is still more important that the tuberculosis itself should be diagnosed, whether cavities are demonstrable or not." This, of course, we all know is true, but my paper deals entirely with the diagnosis of tuberculous cavities and not with the diagnosis of tuberculosis.

In my stressing the importance of the early diagnosis of tuberculous cavities Doctor Parker has brought out one of the big points that I had in mind when he mentions artificial pneumothorax and its indications. All of us who are in large sanatoriums know that this is a recognized procedure, and it should be done early.

POSTURAL DEFECTS—CORRECTABLE IN SCHOOL PHYSICAL EDUCATION CLASSES*

By WILLIAM ARTHUR CLARK, M. D.
Pasadena

DISCUSSION *by Harold H. Hitchcock, M. D., Oakland; Steele F. Stewart, M. D., Los Angeles; C. L. Lowman, M. D., Los Angeles.*

THE necessity for corrective classes in physical education is readily seen when one examines the statistics of findings in large series of cases where routine physical examinations have been made of great numbers of children or young men and women as in universities, large school systems, and in recruits for military service. Such statistics show a certain percentage of any large group to be abnormal in one or more aspects of body mechanics. In some series this percentage is surprisingly large.

It might be suggested that statistics include all the very slight deviations from the normal which are of no consequence except perhaps from the minor viewpoint of cosmetics. In answer to this argument, it can only be said that the danger to health and well-being is a potential one and that whatever measures are adopted to correct even the slightest defect, are justified if they bring the individual to the fullest possible physical capacity

* Summary of a talk given by the author before the physical education teachers of the Pasadena schools.

and as near to perfection as training and perseverance can make him or her.

The question arises: What is normal in a child or youth? Certainly normality is not a sharply defined more or less arbitrary ideal to which everyone must conform or be condemned as abnormal. Types must be recognized and given due consideration. Some boys and girls are of the Antiole type, others are the Clydesdale type. One may be just as healthy, mentally and physically, as the other. Two trees of the same kind may differ widely in contour, yet we would not think of referring to either of them as abnormal. One boy may show a deviation from what is considered as normal posture but due to good compensatory muscle strength, show no ill effects, while another boy with the same degree of deviation may not compensate in the same way and sooner or later show the effects in ill health.

VICIOUS CIRCLE IN POSTURE

There is a vicious circle in posture which has many links. Starting with the link which has to do with the structural framework of the body, we have: (1) slump in the skeleton; (2) interference with organs; (3) poor physiologic function; (4) malnutrition and poor aeration; (5) depressed muscle tone which causes (1) slump in skeleton, etc. It is difficult perhaps in each individual case to tell where the circle started, but it may be attacked and a link broken anywhere. The links with which the physical education teacher have to deal are mostly those of depressed muscle tone and slump in the skeleton.

We must not think of the human body as a structure balanced stably as is a steel building or tower. Its line of gravity or weight-bearing does not pass through the dead center of any joint. In the spine, which is a long series of joints, the line goes through the promontory of the sacrum and the anterior part of the lumbar curve, but does not touch the vertebrae again except in the cervical region. If it were not for muscles and ligaments, the joints would bend under the weight and the entire structure would crumple. Those muscles which counteract this tendency to crumple must necessarily be the strongest.

One of the most delicately balanced joints is the hip. It has been likened by Todd to the hub of a bicycle wheel, the spokes of which are represented by the surrounding muscles. Both the intra- and the extrapelvic muscles maintain the equilibrium of the pelvis on the hips. Interference with any one group breaks the equilibrium. The pelvis is then tilted forward, carrying with it, of course, the sacrum, often to such extent that the sacrum lies completely horizontal instead of nearly perpendicular. When such condition exists a severe lordosis compensates for this extreme forward curve, and an exaggerated dorsal curve which pushes the head and shoulders forward. Many round shoulders may have their real cause in a tilted pelvis. It is certain that round shoulders are rarely seen without the extreme lordosis that goes with the tilted pelvis.

THE HUMAN SPINE COMPARED WITH THAT OF QUADRUPEDS

Lovett makes an instructive comparison of the human spine with that of quadrupeds. It must be remembered that the former differs in anatomic structure very little from the latter; but that they differ in several respects in the mechanics of function. The quadruped spine carries the weight of the trunk somewhat as the supporting structure of a bridge carries its load, the line of force being at right angle to the spine, while the human spine supports the body in a line of force nearly parallel to itself. The front limbs in the quadruped act as supporting structures, but in the human they are merely weights which must be supported by the spine. Chest breathing in quadrupeds is aided by gravity; while in the human frame the ribs must be raised against gravity.

In evolving from the horizontal to the upright position there have been, necessarily, many changes in stress of ligaments and muscles and one is inclined to believe that the evolution is still incomplete, judging from the number of backache cases which we all see and which seem to be due to overstrained muscles. The junction of the spine with the pelvis seems to be the weak spot in the mechanics of the upright position. Possibly in the distant future this joint may become completely ankylosed so that a relaxed sacro-iliac joint and backaches will be an unknown affliction.

DEVIATIONS IN THE ANTEROPOSTERIOR PLANE

Considered without reference to the concomitant disturbances of equilibrium farther down, round shoulders consists in a forward and downward slump of the scapula and entire pectoral girdle, and in an abnormally exaggerated dorsal curvature of the spine, especially in the upper dorsal region. The child is usually low in muscle tone; and in cases originating in habit, low also in will power. The heart and diaphragm are, to a certain degree, suspended from the root of the neck, and if this point of support is persistently low these organs tend to lose tone and suffer from impairment of function. If the entire weight of the clothing is carried on shoulder straps which pass over the outer part of the shoulders, the growing child will have an added difficulty in keeping the shoulders up. Lovett suggests that instead of this method all the clothing below the waist should hang from the belt line, leaving the shoulders unweighted. Goldthwait emphasizes the effect of bad design in school furniture in causing the child to assume a bent attitude at the desk and a slumped position in the chair. The chair should have a shallow seat which will prevent the inclination to slide forward and to buckle the spine in the middle. The shallow seat also provides for both long and short leg individuals as, in the former, the thighs can incline downward readily, and in the latter the individual can sit back in the chair with equal comfort.

As this condition is one of the most prevalent postural defects in school children, it is practicable to treat them in classes. Supporting braces

are generally inadvisable because they tend to weaken the muscles, but they may be found necessary in those cases where passive manipulation is being done, to be worn part of the time to maintain what has been gained by the manipulation.

There is a form of round shoulders which may have its inception in a developmental defect of the vertebrae rather than in muscular weakness. While the vertebrae cannot be said to be diseased, there has been perhaps a delay in ossification in the anterior part of the discs which has resulted in irregularity in shape and thickness of the vertebral bodies anteriorly situated. This causes a backward curve which may be more or less fixed. Such a condition should be suspected in cases which resist passive correction.

Lordosis and abdominal ptosis go together as a rule, and are observed usually in children who are round shouldered. The relaxed abdominal muscles become stretched to unusual length and lose their tone. While it may be necessary in patients well past the youthful years to put on an abdominal belt, in the school girl, the best remedy is development of the rectus muscles by systematic exercises carried out daily. Extreme cases of lordosis may develop into spondylolisthesis in which there is a definite forward displacement of the fifth lumbar vertebra over the sacrum. It should be suspected in people who have very deep depression in the lower lumbar region and who have persistent backache which resists all the usual remedies for relief.

LATERAL DEVIATIONS

So far we have spoken of deviations in the anteroposterior plane. Of the less frequent lateral deviations scoliosis is the most common form. This may be functional, structural or paralytic. The functional type can often be helped by such exercises as the school gymnasium can furnish. Most of these patients are girls, and the curve is to the right in a majority of instances. Many causes have been suggested for the development of lateral curvature of the spine. Perhaps the one heard most frequently is the position of the child at the school desk. This would explain the preponderance of right-side curves since most people are right-handed and sit with the right shoulder higher in writing. It does not explain, however, why more girls than boys are affected.

Another cause which has occurred to me recently, is the posture during sleep. If one lies on the side with a pillow under the head and shoulders, the spine naturally curves down in the lower dorsal region merely by the force of gravity. In girls, the pelvis being wider, this downward curve would be more pronounced than in boys. If true, this would explain the preponderance of girls who suffer from this deformity. Also if it is found that all those who have a right lateral curve are in the habit of sleeping on the right side with a pillow, then the right side majority would be explained. So far the number of cases observed and questioned has not been of sufficient number to verify the theory; but those who have been questioned admit sleeping usually on the right side and have right-sided curves. Much more time is spent in sleep than is spent in sitting at a school desk or in any other one posture, which suggests that the sleep theory is more plausible than the desk theory.

A functional curve, if allowed to persist, may become a structural scoliosis. It is obvious that the best time to treat such a deformity is in its earliest stages before the bones have taken on a contour which fits in with the changed condition.

The diagnosis of scoliosis can be made by carefully observing the child from directly behind. The clothes should be removed down to the hips except that a narrow apron may be hung down in front so that it does not cover the shoulders. The arms should hang relaxed. Severe or even moderate cases can be recognized at a glance. The very mild forms will require more careful analysis. It should be noted whether the shoulders are on the same level and whether one scapula is higher or more prominent than the other. The curves between the ribs and hips should then be compared, one side with the other. The iliocostal angle may be deeper or more acute on one side and more or less flattened out on the other. In cases where one leg is longer than the other, the hip is, of course, actually higher on the side of the long leg and the iliocostal angle is also exaggerated. Measurement of the legs should be done in all cases. The patient is then asked to bend forward until the back is horizontal, head down, arms hanging relaxed. A curve to the right will then show up as an elevation of the right side above that of the left. This is due to rotation of the spine, carrying with it the entire chest.

Scoliosis cases cannot well be treated in groups or postural classes but should have individual attention. Each case is a problem in itself, and unless two identical cases should be found, special exercises suited to each case will be required. The structural cases will, of course, need more than exercises, as it is necessary to overcorrect and to hold them in the overcorrected position in the hope of changing the shape of the bones and the contour of the chest. Paralytic scoliosis requires that the spine be supported, since a paralyzed muscle has little chance of improvement if kept constantly on a stretch. Exercises in these patients are to be done with caution in order that the paralyzed muscles may not be overworked and yet have sufficient use to develop the power that remains.

Torticollis, or wry neck, in its mildest form, can be helped by supervised exercises supplemented by massage and passive motion. The majority of such cases are due to muscle contracture which can be stretched out if not of too long duration. The unsightly asymmetrical appearance of the face with one eye higher than the other, which is noticed in torticollis of long standing, can be avoided if the condition is recognized and treated in the beginning. Even though the twisted head and wry neck can be straightened by cutting the

tendon, the face can never be changed if the deformity has not been corrected in childhood.

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DISCUSSION

HAROLD H. HITCHCOCK, M. D. (1906 Franklin Street, Oakland)—Doctor Clark has pointed out some of the fundamentals necessary for the correction of postural defects in school children. The correction of these defects I feel should be the first thing accomplished in the departments of physical education. After the fundamentals of correct posture have been mastered, exercises done by students to maintain correct posture will be of much greater benefit. It is indeed discouraging to see students go through compulsory exercises maintaining an entirely incorrect body mechanics.

Doctor Clark has clearly pointed out what is important, and it would be gratifying to see more students coming out of high schools with these details corrected. Examinations of college students do not show this to be the case.

❋

STEELE F. STEWART, M. D. (817 Westlake Professional Building, Los Angeles)—Doctor Clark in giving a résumé of the theories of posture has failed to mention probably the two most important factors involved in the production of posture: namely, heredity and fashion.

At the present time there is no way to influence heredity, and fashion is based on personal vagaries that put it beyond systematic help. I feel that the whole subject of posture is being overemphasized, and especially is this true when it is turned over to the physical education department of the public schools. It is a rather remarkable fact that self-confidence varies in inverse proportion to knowledge, and the blasé way in which the subject of posture is taken by the average physical education graduate and teacher I fear reflects largely ignorance. It is my personal opinion that it is a waste of time and public money to carry on any corrective physical education in the public schools. The problems involved in any particular case are so complicated that specialized knowledge is required for proper understanding and solution, and hence corrective treatment should only be given under the direction and care of a competent physician.

❋

CHARLES LE ROY LOWMAN, M. D. (2417 South Hope Street, Los Angeles)—To persons having extensive experience in the examination of school children of all ages the force of Doctor Clark's comments will meet with significant approval. Medical men have assumed an attitude of indifference toward postural deviations, believing that they are hereditary and will be outgrown, and because certain cases of bow-legs and shoulder girdle deviations in childhood are adjusted after a few years, take for granted that readjustment always occurs. If this were true why should large groups examined at the universities, and similarly in the army, show a very high percentage having postural deviations exactly like those in childhood? The findings and percentages of postural defects in these adult groups have been found to be almost identical with those in the grades. This is, I think, definite evidence that most deviations are not outgrown.

Various authorities give percentages of from fifty to eighty, of school children with some postural deviation. It can readily be seen that there are not enough interested medical or orthopedic men to train this enormous number of individuals. Consequently the school health and corrective departments must bear the brunt of this preventive work. It is well known that many physical directors are not specially trained in corrective work, but the impetus of the last few years has given a good deal of very definite education to many supervising physical directors who are carrying on excellent work in this line. The schools of Pasadena for years have carried on a uniform and consistent line of corrective work. I have been well informed that the corrective department of their high schools contains more individuals who are recent arrivals in Pasadena than it does resident Pasadena children who have passed through the grades, showing that the work of the last five years, even where it is done on a group basis, as it is in their elementary schools, is effective.

The most essential factor in this work is, of course, the necessity of impressing upon directors and examiners just which children may be handled by the physical education department. The orthopedic referees in the Los Angeles schools are doing very effective work along this line in weeding out the cases which are too severe to be handled by the directors, as well as those that are pathological. It is the aim of these departments to handle only simple postural cases which should respond definitely to health and exercise work.

The largest group of deviations are those found in the shoulder girdle and in the feet and legs. In young children these deviations comprise as high as 80 and 90 per cent, and in the high school group 65 to 70 per cent. Physical education activities should be modified to meet the needs of the majority. Activities can be definitely corrective without being labeled as such. For instance, swimming is a corrective procedure which can be used for certain types of cases, such as shoulder girdle deviations and round shoulders. Certain strokes can be definitely corrective and still not lose any recreative value. Vicious effects of running and jumping can be neutralized by proper attention to shoeing and by giving enough other gymnastic exercises to counteract such effects. Throughout the whole chain of activities a careful analysis of activities will show that this same idea can be carried out to good advantage.

❋

DOCTOR CLARK (closing)—I wish to thank Doctors Hitchcock, Stewart, and Lowman for their discussion of this paper. Of course, as Doctor Hitchcock suggests, the problem of body mechanics should be intelligently met. The formation of habits in the child are most important in this connection.

I am glad to have Doctor Stewart's frank criticism and feel that such is essential regarding any problem which may be overemphasized as it serves as a balance wheel in our activities.

Much of the work in the Pasadena schools had its start under the guidance of Doctor Lowman, who is still helpful with advice regarding all these problems. His comments above are therefore most valuable.

ON COUNCILMANIA LAFLEURI*

By RAWSON J. PICKARD, M. D.
San Diego

DISCUSSION *by T. H. T. Wight, M. D., Palo Alto; Herbert Gunn, M. D., San Francisco; John V. Barrow, M. D., Los Angeles.*

SIX years have passed since Kofoid and Swezy published their report describing *Councilmania lafleuri,* an ameba parasitic in the human intestine,[1] where it has been found to be as common as the infection with *Entameba coli.* During this time in spite of the importance of the discovery both scientifically and clinically, that is, as regards both exactness of observation and the art of medicine, there has been but little notice of this ameba. Wenyon denied the specific existence of *Councilmania,* claiming that most of the budding cysts were artefacts, and while his paper was answered[2] he does not appear to have given the matter any further consideration, although in his "Protozoölogy" he gives a description of it as an "aber-

* Read before the Pathology and Bacteriology Section, California Medical Association, at the Fifty-Sixth Annual Session, April 25-28, 1927.

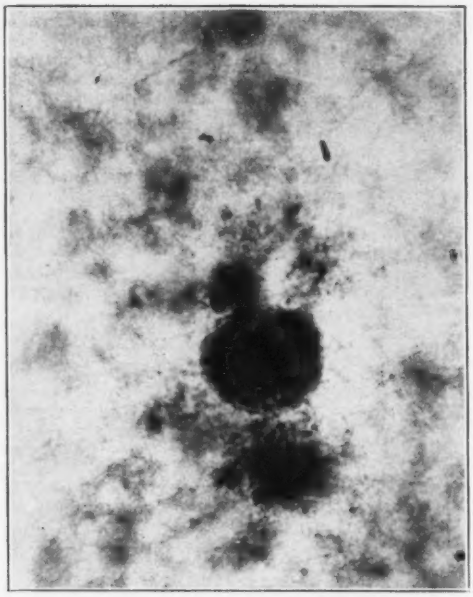

Fig. 1—Magnification about 945x. Motile Councilmania, 28 x 24 mu, showing ingested red blood cell, and nucleus with karyosome composed of mass of chromatin granules.

rant form of *E. coli.*"[3]† Brumpt[4] following Wenyon, adds *Councilmania* to the long list of synonyms of *E. coli.* In medical literature scattered references can be found (cf. Brumpt, citing Riff of Strasbourg) to an *"E. coli"* that is pathogenic and ingests blood cells, but the ameba is not usually described with sufficient detail to know whether or not *Councilmania* had been seen; there is the notable exception of Mathis and Mercier,[5] whose paper is referred to later. Indeed to the honor of California in the case of this work of Kofoid and his associates the proverb as to the prophet has been reversed. Barrow,[6] Hall and Reed,[7] and other writers here carefully distinguish *Councilmania* from the other amebae.

NONRECOGNITION OF THIS PROTOZOA

There are several reasons for this general neglect. In the first place, study of the parasitic protozoa in man is only a few years old, clinical work having only existed since the war. Then most of the textbooks have been written by zoölogists with little clinical contact, who judge the parasitism of man with his sensitive neuropsychic system, as they do that of the simpler organisms. This is not true of Brumpt, who combines both viewpoints, nor of Kofoid. A naïve discussion of *E. histolytica* infection in the February bulletin of the Chicago Medical Society illustrates the lack of realization of the importance of this class of focal infections by medical leaders. In addition, there is the difficult technique of diagnosis, and special training is needed to recognize these minute parasites. The protozoae are not like the tubercle bacilli that glow as red a warning for the tyro as for the expert.

But there is an added difficulty when one attempts to follow the texts of the authorities, and this because the description of the two well-known amebae is confused by including the description of this third species, which latter, once recognized, permits a definite description of all three amebae and their ready separation from each other. Wenyon (and one might quote Brumpt or Dobell, but Wenyon makes more positive statements) says that an ameba of 15 to 20 mu, very active, containing red blood cells and having an indistinct nucleus is certainly *E. histolytica,* and that a slow-moving ameba with granular pseudopodia, food vacuoles containing yeasts and bacteria but never blood cells, with an eight-nucleate cyst is *E. coli.* What is one to say then of an ameba which constantly exhibits the size, motility, hyalin pseudopodia of the ameba of dysentery, yet like *E. coli* has an eight-nucleate cyst, and in the motile form has a visible nucleus, with yeasts and bacteria and occasionally blood cells in its food vacuoles? There is nothing more discouraging for those who try to observe accurately and well than such obstacles coming from their leaders, nor does anything more incline the beginner to listen to the counsel of certain works on this subject which state that amebae vary so individually in a species that detailed study of them is only confusing.

ITS DIFFERENTIAL DIAGNOSIS

Before Kofoid and Swezy described *Councilmania lafleuri* this ameba was taken in the motile stage for the ameba of dysentery and when encysted for *E. coli,* which were the only amebae generally recognized in the feces before the period of exact observation which has followed the war-time surveys showing the frequency of protozoal

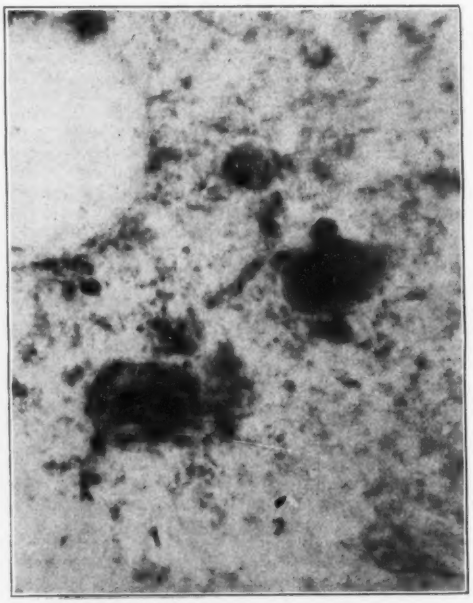

Fig. 2a—Magnification, 945x. Below and to left, motile Councilmania, 32 x 20 mu, showing hyaline ectoplasm. Above, a budding cyst, 14 x 25 mu.

†It might be noted that in this excellent and thorough work there are other arbitrary rulings, e. g., the rejection of da Fonseca's work on enteromonas.

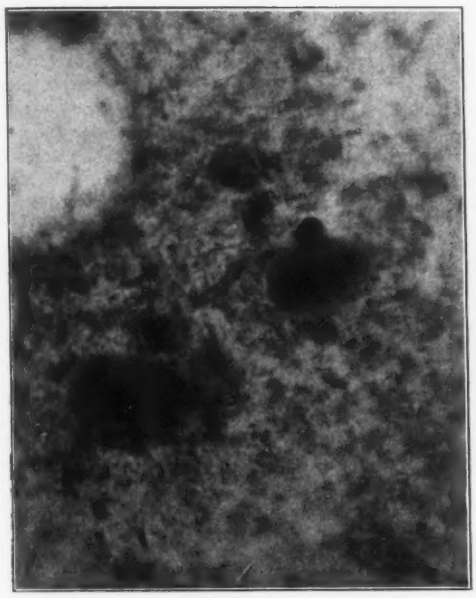

Fig. 2b—Same as 2a, but taken at higher focal level to show the nucleus in the bud above the cyst.

infections in all classes of the population and their causation of low-grade illnesses. Before this time, stained preparations were seldom made in clinical laboratories and cysts were rarely looked for or recognized. At present more careful work is requisite to be acceptable and is more often done. While *Councilmania* resembles the two *Entamebae,* it differs from them as much as they differ from each other by its dispersed karyosome, and nuclear membrane free from chromatin in the cysts, and in the budding cysts presents a character not seen in any of the other amebae. These budding cysts were first seen by Mathis and Mercier, and were so minutely described and drawn by them that we can recognize *Councilmania* although the writers wrongly thought them to be schizogonic forms of *E. coli,* an interpretation due to wet fixation in sublimate which does not plainly show the cyst wall except in those cysts, evidently destined for another host and not to bud in the intestine, which have an exceptionally thick wall. With wet fixation in alcoholic Bouin's solution, following Langeron's technique [8] the wall is always visible, the cytoplasm often shrinking away from it, leaving a space crossed by fine protoplasmic threads so the area has a light vacuolated appearance. The nuclei and denser cytoplasm are not always in the center of such a cyst; they are often attached to a point on the cyst wall where there may be a depression, a bulging, or a pear-shaped neck, all apparently early stages in budding before the actual extrusion of a nucleus surrounded by a small mass of cytoplasm as a free ameba—found in my preparations in about 3 per cent of the cysts. It is easy to convince one's self as to the meaning of the budding cysts by search over a stained slide and finding cysts in all stages of the process. Further details can be found by consulting Kofoid's papers.

A protozoal cell does not differ so much from the phagocytic cells of the host that it cannot insinuate itself into the cellular colonies of the host, where the products peculiar to the parasitic metabolism are long tolerated. Man's adaptability may for years conceal the damage, even for the lifetime of an individual, but there are always some individuals who evidence the dangers latent in a parasitism either by physiologic changes, or toxic effects on the nerves or other sensitive cells. Syphilis offers an analogy; and the colon bacillus likewise (aside from the occasional acute infections, in all of us, as Metchnikoff has shown,) wastes strength by a slow intoxication that wears out the body. The flagellates often seem to be harmless in a carrier, at least at the time of examination, so that many writers can still be found who consider them harmless commensals. Brumpt called attention to their etiologic rôle in diarrheas in 1912. Haughwout in 1918 discussed [9] the fact that their metabolic products, being unfitted for human absorption, were possible sources of toxicity, aside from tissue invasion, which in the case of the amebae means also the invasion of the bacteria carried with them. Such products could arise from any protozoan infestation. The fund given Hegner last year for the investigation of the relationship of man and his parasitic protozoa has not yet been heard from. The pathogenicity of the protozoa is most difficult to demonstrate absolutely, as few of them have been cultivated. There is, however, a steadily accumulating mass of clinical evidence which is beginning to incriminate

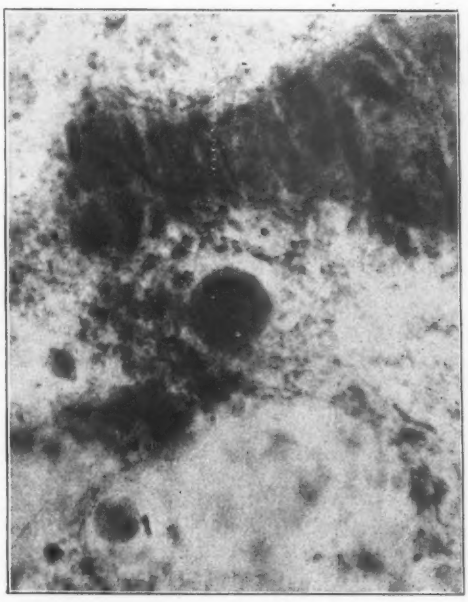

Fig. 3a—Eight nucleate cyst 20 mu, not budding. Five nuclei in focus, thick cyst wall. Karyosome a group of granules.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

DIAGRAMMATIC ENLARGEMENTS

1. Red blood cells and nucleus in Fig. 1.
2. Nucleus in the buds in Figs. 2a and 2b.
3. Groups of five and three nuclei in Figs. 3a and 3b.
4. Nuclei in Fig. 4 grouped near the bud.

even organisms until very recently considered harmless by all, such as *Endolimax nana.*

ITS PATHOGENIC NATURE

The ameba *Councilmania* is pathogenic in the same manner as is the small race of the ameba of dysentery, which Brumpt[10] sets aside as a separate species, *E. dispar,* based on its slight pathogenicity for cats, noncausation of dysentery, and its feeding, instead of by histolysis and upon blood cells, on bacteria. An even firmer basis for its separation would be the peculiar pathogenicity (first worked out by Boyers). Nearly all carriers besides constipation show toxic effects in the nerves, joints, in disturbance of function, especially digestion, in general lassitude, a ready fatigability, so that while the symptoms are too numerous to enumerate the general picture is recognizable and definite enough for practical diagnosis, as Boyers[11] has stated. The same clinical picture is shown in heavy infections with *Councilmania.* Kofoid reports the probable pathogenicity of this ameba in his first paper, and reports of cases followed by Barrow and by Hall and Reed confirm it.

Among twenty-two cases with protozoal infections referred to my laboratory for examination of the feces last fall there were three with *Councilmania* (reported elsewhere). In all three the amebae were numerous, both motile and encysted. Budding cysts are especially numerous after a saline, showing that gemmation in the intestine is a normal mode of multiplication for this ameba. In all three cases motile amebae with ingested blood cells were frequent. A patient referred by Doctor Worthington who had had a secondary anemia recurrent after treatment has been entirely well after elimination of the *Councilmania* with stovarsol. A second case, referred by Doctor Banks, who had for years a severe lumbar myalgia and marked fatigability is also well, following stovarsol. A third case after, temporarily at least, getting rid of the amebae by stovarsol treatment which was not well tolerated, and was alternated with emetin, left observation without improvement. All three cases have had a series of daily stools examined and found negative before being pronounced free of the infection. And in each case the fecal examination was a last resort, as it perhaps should be at the present time, the better established foci of infection being ruled out first. By so proceeding we can feel more certain of the reality of the protozoal source of the toxic absorption, and the relief of symptoms following elimination of the protozoa when it occurs permits us reasonably to conclude that they were the cause.

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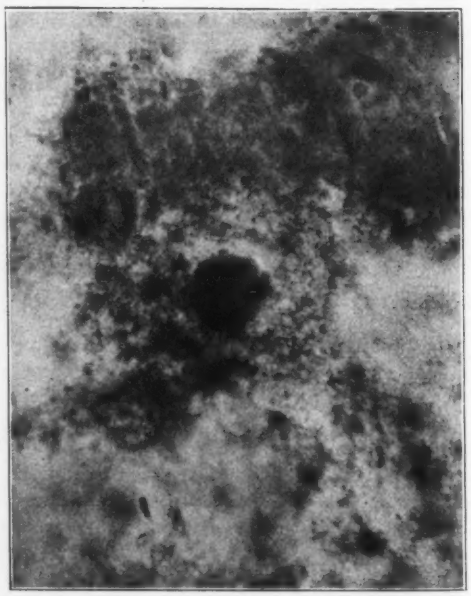

Fig. 3b—Same as 3a, but at different focal level to show the other three nuclei.

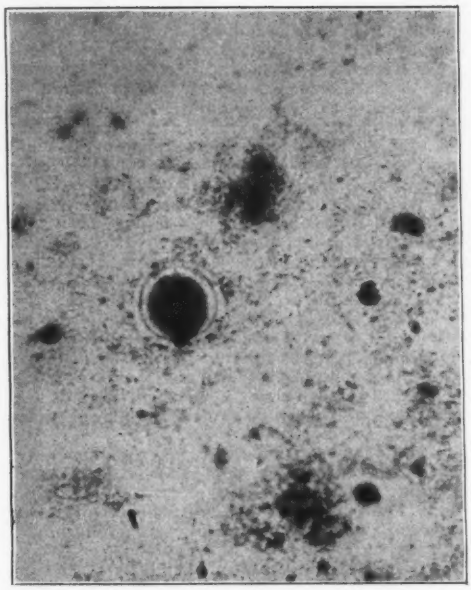

Fig. 4—Cyst, 17 mu, early stage of budding. Nuclei grouped near bud.

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DISCUSSION

T. H. T. WIGHT, M. D. (United States Veterans' Hospital, Palo Alto)—The paper on *Councilmania lafleuri* by Rawson J. Pickard, has been submitted to this laboratory by Professor E. M. Schultz of Stanford University for criticism.

That we may not be considered impertinent in undertaking such a review, we offer that we already have made some criticisms on this alleged organism—once in the *Proceedings of the Society for Experimental Biology and Medicine*, 1925, xxii, pp. 517-22, on two occasions in the United States Veterans' Bureau Bulletin, a paper read before the Society of Tropical Medicine last May, and a forthcoming article in the same society's journal.

It is a disagreeable task to criticize the careful work of another with whom one has no common basis of thought unless it be the search for truth by humble observers. This is exactly our position in regard to Doctor Pickard's paper. Whereas he accepts all of Kofoid's and Swezy's sweeping statements regarding the identity and pathogenicity of the organism known as *Councilmania lafleuri*, he gives us not one tittle of evidence that such an organism (if it has a real separate existence) has any pathogenic qualities whatever; the dietary evidence is mostly to the contrary. No one can say that because occasionally red cells may be ingested that this constitutes indubitable evidence of pathological function. It is true that *E. histolytica* does not ingest red cells in its normal habitat. It is only when dysentery supervenes and both the patient and the ameba are suffering from abnormal conditions that the free forms absorb any material that is most handy, including red blood cells. In vitro *E. histolytica* absorbs bacteria, and it certainly does not do this in the intestinal submucosa. Therefore considering *E. coli*, which is a harmless and possibly beneficial intestinal scavenger that absorbs bacteria and some protozoa, we may conclude that it may occasionally feed on red blood cells if any are present in the fecal garbage where it makes its home.

We are willing to agree with Doctor Pickard that there is a form of *E. coli* which under certain conditions shows great activity and clear-cut pseudopods—nor is this an *E. histolytica* with eight nucleated cysts—I think it possible that both Wenyon and Dobell would agree with this, although Dobell denies it in his earlier 1919 edition. The lack of uniformity in the progeny of the uniparental *Ameba Difflugia corona* would readily cover the slight observed differences between Kofoid's typical *Councilmania lafleuri* and *E. coli* with one exception, namely, "budding."

Now "budding" can be artificially produced. It is not a prerogative of *Councilmania lafleuri*. We have induced buds in *E. histolytica*, *I. butschlii*, and *E. nana*. Provided one has the necessary conditions buds follow as a matter of course. Has Doctor Pickard or Kofoid and Swezy ever seen the segregation of nuclear and cystoplastic material within the cyst prior to excystation? As a protozoological analogy this should be a necessary factor. With suitable preparation and high osmotic pressure as many as 90 per cent of the cysts may show buds. Some of these buds will contain as many as three nuclei, but the majority have none at all. Can anyone see an object in budding in an uninuclear cyst like *I. butschlii*? Why should an immature histolytica cyst bud? The answer is that they do not bud. We are viewing abnormal conditions. In a new host some such process may take place, but only in a mature cyst, and in this case the cytoplasm will segregate itself around its own individual nucleus and there will be well-marked division lines. That occasionally budding may take place in the original host is no more impossible than that a woman may have an abortion, but one would not say we have a new species of woman.

Perhaps we may be permitted to quote the conclusions given in our paper in the *Proceedings of the Society for Experimental Biology and Medicine*, 1925, xxii, pp. 517-22:

It is suggested that there are at least two types of *E. coli*; one—of which a perfect description is given by Kofoid under the name of *Councilmania*—charac-

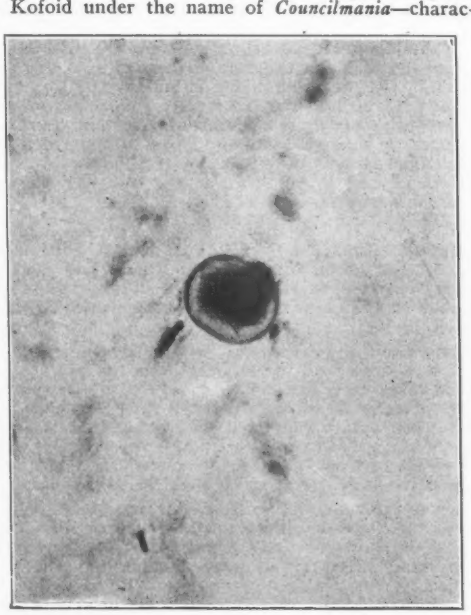

Fig. 5—Cyst, 18 x 21 mu, six of eight nuclei visible, extrusion of ridge of chromatoidal matter, early stage of budding.

terized by possessing clear blade-like pseudopodia, well differentiated from the endoplasm, occasionally of exceptional motility, which may be retained even after prolonged centrifugation in cold tap water in the process of concentration. This type seems to have a tendency to the formation of irregularly contoured, thick-walled cysts. Such cysts as these are easily fractured by immersion in a hot mercurial solution such as Schaudinn.

The other type is more sluggish, and has not the clear blade-like pseudopodia in the free state. By concentrating a sufficient number of the cysts of this type and subsequently fixing in hot Schaudinn, some at least of the cysts will probably give the appearance to which Kofoid and Swezy have applied the name *Councilmania.* While Kofoid's *Councilmania* would seem to refer to the first type mentioned, if our reasoning be correct, there is either no such species as *Councilmania* or there is no such organism as *E. coli.* For all organisms that we have been accustomed to include under the term *E. coli* are potential *Councilmania* on the only real distinction made between the two organisms, namely, budding; and this latter phenomenon depends on purely physical attributes and artificial outside causes.

Condition of internal stress produced by osmosis in combination with a rigidity of the cyst wall may be the necessary factors in producing buds. Whatever be the cause, budding forms are not seen in the fresh specimen, or, if they should be, may be ascribed to a pathologic or abnormal physical condition.

Amebae of the type described as *Councilmania* are exceedingly common. There is no evidence that they have pathogenic qualities. Their normal diet would class them as fecal scavengers.

In a stool from which stained specimens of budding cysts may be easily made, it is impossible to find any detached "amebulae"—which leads one to infer that budding is produced artificially in the process of fixation and staining. Many buds may be found in direct smears from concentrated cysts after fixation in hot Schaudinn, though none at all are to be seen in fresh saline smears from the same original material.

Budding of amebulae in the bowel of the host is contrary to natural reason. It would be suicidal and is therefore impossible, except as a pathological process. That some such process takes place after ingestion of the cysts by a new host is, of course, possible or even probable.

If budding be not a normal process within the bowel, there is no excuse for the naming of a new species. On the other hand, if budding be a natural process *E. coli* must be the rarest of intestinal inhabitants and *Councilmania* the commonest, and it will be necessary to give names to new species of intestinal amebae bearing the same relation to *E. nana, I. butschlii* and *E. histolytica* as the so-called *Councilmania lafleuri* does to *E. coli.*

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HERBERT GUNN, M. D. (350 Post Street, San Francisco)—The subject of this paper has been of especial interest to me, as I have been doing more or less work with it since Kofoid and Swezy published their article in 1921.

In 1922, in the *Journal of Parasitology,* 9-24, I published an article on the subject based on a study of over twenty cases in which I stated that it was impossible to accept as correct any of Kofoid's conclusions. Since then I have examined several hundred cases of coli infection, both clinically and microscopically, with the result of being more firmly convinced that there is no warrant for adding a new ameba to the list.

A careful comparative study of unstained, iodin, eosin and hematoxylin stained specimens of cysts should show, it seems to me, anyone with a "prepared open mind" that the so-called budding is produced artificially.

In such a study great care must be used to avoid pressure as the artefact can readily be produced by it. There is considerable possibility of error if one attempts to classify amebae in the vegetative stage, as *E. coli* may be extremely active under some conditions with distinct hyaline pseudopodia.

Usually *E. Coli* are very sluggish and inactive, but the cysts from these sluggish forms can be demonstrated as *Councilmania lafleuri* if it is so desired.

Definite data as to the structure of amebae must be carried out in stained specimens and here the difficulties multiply. Understaining, overstaining, the effect of heat, pressure and chemicals, must all be taken into consideration if errors are to be avoided.

Whether or not red blood corpuscles may occasionally be seen in *E. coli* I do not know. In my own examinations I do not find them. Occasionally bodies somewhat resembling red cells are seen which are probably vacuoles. The definite red corpuscles as found in *E. histolytica* I never find in *Coli.*

If Doctor Pickard is, as I believe to be the case, wrong in his premise and there is no such parasite as *Councilmania lafleuri,* there remain for further discussion the symptoms ascribed to *E. coli. E. coli* has been generally accepted as a harmless organism and there certainly has been no evidence produced to show that it is pathogenic.

The fact that occasionally a patient infected with *E. coli* is relieved of symptoms upon being cleared of the parasite is suggestive but not conclusive of pathogenicity. On the other hand the majority of patients harboring *E. coli* if cleared of the infection show no improvement.

It is possible that *E. coli* may under certain conditions produce symptoms, but it certainly occurs in but a very small percentage of those infested.

There certainly is no justification for the blanket incrimination of *E. coli* for all of the various symptoms mentioned by a small group of writers during the past few years.

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JOHN V. BARROW, M. D. (701 Westlake Professional Building, Los Angeles)—Doctor Pickard's paper is a real contribution to the subject of protozoology in its relation to clinical medicine.

When one consults the textbooks on protozoology there is considerable confusion in picking out the salient points of pathogenic ameba as featured by the drawings in the text. There is certainly a lack of cystological diagnostic skill demonstrated in most of these works. The drawings are so inadequate in most systems of medicine that one is better qualified to make his diagnosis on the context rather than the drawings.

In bringing the *Councilmania lafleuri* to our attention Doctor Pickard helps to clear up much confusion. I am glad he does not find its budding an artefact. In our laboratory we have tried many times to produce this condition in *Ameba coli,* but have been absolutely unable to do so. And we have never been able to understand why the artefact should not be produced in all ameba if it could be easily produced in one, namely: the *Ameba coli.*

I am convinced of the correctness of Professor Kofoid's work on this ameba, and its corroboration by men like Pickard is certainly a source of satisfaction. I am glad he places it in the pathogenic class. Even if it has no powers of invasion the clinical picture of these patients more than strongly suggests the toxic action of a foreign protein furnished adequately by the dead bodies of these organisms.

Opponents claim this is no proof of pathogenicity. However, a mixture of arsenic, sugar, sodium chlorid, etc., would be considered poisonous if a clinical picture were that of arsenical poisoning, and the substance so taken by the patient would be held as extremely suspicious material until thorough analysis proved it otherwise. And inability to analyze the chemical mess would not take away from us the belief that we were dealing with metallic poisoning, and we would all say, very probably arsenic.

You all know we are unable to produce these ameba in pure culture separated from all extraneous organisms. Until that is done we must hold in abeyance all of these cock-sure, definite statements that such an organism has no pathogenicity whatsoever. This last

assertion is a step farther from proof than a positive assertion of the pathogenic qualities of these organisms.

❦

DOCTOR PICKARD (closing)—Why is it that so many of the physicians working with the human intestinal parasites who are quite ready to assert their ability to distinguish *Councilmania lafleuri* as a "type" or "form" of *E. coli* are unwilling to acknowledge that this form is a distinct species? Are we so little scientists that we are affected by the present-day democratic resentment of authority! Perhaps it would have been easier if Professor Kofoid had placed *Councilmania* in the genus *Entameba* with the two species which resemble it, and each other, as much as they differ from one another. This aside from the question of budding. Kofoid, and Mathis and Mercier have followed the process of excystation and the wandering off of small amebae in fresh specimens. The budding forms of *Councilmania* do not occur in every specimen containing cysts, and in some carriers are uncommon even in a series of specimens. The diagnosis is made chiefly on nuclear structure, as it is for the other amebae.

I do not use hot Schaudinn's for fixation, but alcoholic Bouin's solution at room temperature. Even hot Schaudinn's does not produce buds in *E. histolytica* or *E. nana* for most workers. If suddenly it did so, it would seem advisable to revise one's technique. I do think that Wight and Prince have explained the discrepancy between the number of budding cysts found in fresh and stained preparations. Quoting a paper to appear in the *Annales de Parasitologie*, the many cysts with buds or bottle-neck protrusions in which there is no nucleus may very likely be due to rupture caused by osmotic tension in a cyst which is about to gemmate. In their paper in the *American Journal of Tropical Medicine*, Wight and Prince are so insistent that the buds are artefacts that they overlook Kofoid's description of the nucleus of *Councilmania*, which is nevertheless well shown in their really marvelous microphotographs, even of the trophozoïtes, in which the differential diagnosis of amebae is especially difficult due to variation in individuals. No, the budding is not the "only real distinction," and even if all the buds were artefacts, their presence in *Councilmania* cysts alone would remain diagnostic for nearly every worker. As to the rarity of *E. coli*, during the year I have found five *E. coli* infections, and six *Councilmania* (of which five were definitely pathogenic). The pathogenicity of the organism is sufficiently proved to patients who lose their symptoms along with their parasites as well as to those who, like the second case mentioned, who after a year's good health has recently had a relapse of her lumbago and has stools again teeming with *Councilmania*.

The mechanism of protozoal pathogenicity is speculative. Doctor Barrow's theory is reasonable, and objections, if backed up with experimental or other facts, will receive serious consideration.

ABERRANT RENAL ARTERY*

By FRANKLIN FARMAN, M. D.
Los Angeles

DISCUSSION *by E. Spence De Puy, M. D., Oakland; Frank Hinman, M. D., San Francisco; Walter B. Schwuchow, M. D., Los Angeles.*

THE renal arteries come off one on each side of the abdominal aorta, a little below the superior mesenteric and first lumbar arteries, on a level with the first lumbar vertebra.

ANATOMY OF THE NORMAL RENAL BLOOD SUPPLY

On the right side the artery passes behind the inferior vena cava, is somewhat longer, and on a slightly lower plane than the left. In front of each is the corresponding renal vein, and behind, at the hilus of the kidney, is the commencement of the ureter. Each artery as it enters the hilus of the kidney usually divides into three main stems, an upper, middle, and lower, which pass to the corresponding portions of the kidney pelvis. Each of these primary stems then divides to form seven to nine secondary branches, the majority of which pass anterior to the pelvis, while a few are posterior to it. No anastomoses take place between the branches of the anterior and posterior secondary stems, forming the so-called plane of arterial division.

Each renal artery gives off the following branches:

(*a*) Inferior suprarenal, which ascends to the suprarenal body.

(*b*) Capsular or perirenal branches to the capsule of the kidney and perirenal fat.

(*c*) Ureteral branch to the upper end of the ureter.

EMBRYOLOGY OF THE VASCULAR SUPPLY OF THE PERMANENT URINARY SYSTEM

In its embryologic development the tissue, which gives rise to the permanent kidney, passes through a complicated series of changes, some of which are progressive, others regressive. The permanent kidney is preceded by the development of two earlier excretory organs, the pronephros, and the mesonephros. Of these the pronephros is the first to develop; it is always rudimentary and degeneration sets in and is completed early. The mesonephros makes its appearance shortly after that of the pronephros, attains a large size, and is an important organ during embryonic life. The few remnants of it which remain enter into the formation of the genital apparatus. Before the mesonephros has attained its full development the metanephros or permanent kidney makes its appearance and becomes a functional organ while the mesonephros is undergoing degeneration.

The vascular relations in that portion of the body in which the urogenital system arises are quite different in early fetal life from those of later fetal and postfetal life; vessels which are prominent at the stage of development when the kidney is most susceptible to mechanical influences later become small or disappear completely. The complicated series of changes through which the urogenital system passes gives opportunity for a variety of permanent developmental anomalies. The vascular supply of the abnormal and congenitally displaced kidney usually deviates from the normal.

The vascularization of the kidney is effected after the organ reaches its permanent position. The renal artery is derived from the plexus of periaortic vessels. This plexus has many roots from the aorta which affords an opportunity for the change from an embryonic pelvic position to its permanent one. The channel for the permanent renal artery is selected mechanically. Should the usual channel be occluded, a route not so convenient may be utilized, hence the chance for

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variation and anomalies in the blood supply to the kidney.

Bremer states that the anomalies of the renal artery depend on vessels present in the embryo before the aorta and its larger branches develop mesodermal coats. There are no "late branches." Certain anomalies are due to the persistence of the early renal blood supply most frequently seen with pelvic kidneys, that is, the renal artery as a branch of the iliac, inferior mesenteric or middle sacral.

FREQUENCY AND TYPES OF VASCULAR ANOMALIES

From the studies of Eisendrath, Straus, Seldowitsch, Piersol, Quain, and other anatomists, the frequency and types of anomalous renal vessels have been determined.

Variation in both the site of origin of the renal artery and in its mode of distribution to the kidney occur. It may be said that vascular anomalies of the kidney may be found in from 20 to 25 per cent of bodies. Quoting Schultz's analysis of the studies made by Eisendrath and Straus on 200 kidneys, and by Eisendrath alone on another series of 218 kidneys, in 71.1 per cent the renal arteries were normal; in 4.2 per cent an accessory renal artery arose directly from the aorta to the upper pole of the kidney; in 8.0 per cent an accessory artery ran directly from the aorta to the lower pole; in 0.48 per cent an artery to the lower pole was derived from the iliac arteries; in 0.24 per cent the renal artery itself gave off a branch to the lower pole.

Types of anomalies of the renal artery include:

(*a*) Superior polar artery arising from the main renal artery.

(*b*) Superior polar artery from the aorta.

(*c*) Inferior polar from the main renal artery.

(*d*) Inferior polar from the aorta.

(*e*) Inferior polar arising from the iliacs (common and internal). In addition may arise from the middle sacral or even inferior mesenteric arteries.

Anomalies of the retropelvic vessels and of the renal veins occur, but are of less clinical or surgical importance. As pointed out by Eisendrath, the posterior aspect of the renal pelvis is not avascular as formerly believed and may be crossed by both arteries and veins. It is common to find the single small renal artery divided into equal-sized pre- and retropelvic branches, also a fanlike distribution of the vessels is frequent. Occasionally the main renal vein is entirely retropelvic.

PRODUCTION OF HYDRONEPHROSIS BY ABERRANT VESSELS

A slowly developing hydronephrosis may result from compression or distortion of the ureter by an anomalous vessel. These abnormal vessels usually compress the upper part of the ureter at, or near, its junction with the pelvis. As a rule these obstructing aberrant vessels go to the lower pole of the kidney or to the inferior margin of the hilum, and may pass either anterior or posterior to the ureter. Borelius believes that abnormal mobility or sagging of the kidney may be an important additional factor in hydronephrosis due

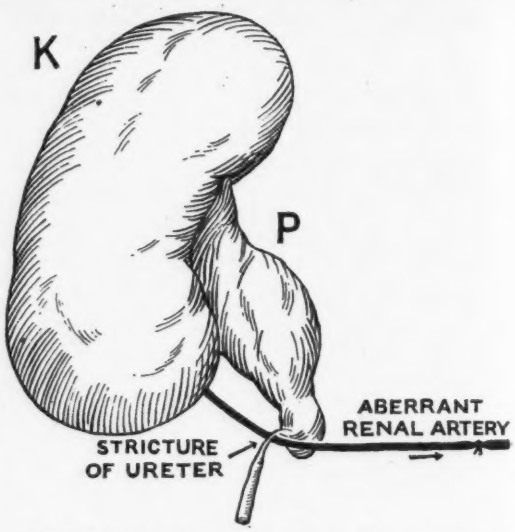

Diagram showing hydronephrosis and stricture produced by pressure from aberrant renal artery.

to abnormal vessels. Albarran (cited by Young) states that "whether the abnormal vessels pass in front or behind the ureter, one is unable to understand how it is able to kink the ureter in order to cause hydronephrosis. On the contrary, a hydronephrotic kidney may descend and the ureter become encroached upon by vessels which cross either in front or behind it." Klukow, in 1912, collected fifty-seven cases of hydronephrosis due to abnormal vessels.

Furthermore stricture of the ureter at the site of compression by the anomalous vessel has been found not infrequently. Young lists four such cases in a series of ninety-eight unilateral cases of hydronephrosis. Nephroptosis with aberrant vessels occurred one time in the same series.

DIAGNOSIS OF ABERRANT VESSEL

An anomalous renal vessel should be suspected in those cases of unilateral hydronephrosis produced apparently by some obstruction in the upper part of the ureter which cannot be definitely ascribed to ureteral stone, stricture, tumor, or nephroptosis. It is impossible to make a positive diagnosis of an anomalous vessel causing hydronephrosis before operation.

An atypical or accessory blood supply should be suspected in cases of abnormalities of the kidneys, such as the fusion forms (horseshoe), ectopic, and congenital malpositions. Furthermore any abnormality of one part of the urogenital system should put in mind the possibility of associated anomalies, especially as to variations in the vascular distribution.

SURGERY OF ANOMALOUS VESSELS

Simple division and ligation of aberrant vessels causing hydronephrosis has cured the condition in the majority of cases reported. The Mayo Clinic in 1909 reported twenty-seven cases of surgically treated hydronephrosis. Twenty of these were associated with accessory blood vessels. In order to prove the causative relationship, in thir-

teen of the twenty cases the vessels were merely severed and ligated and a cure of the condition obtained. In 1922 Kummer collected fifty-six cases in which an operation (ligation) upon the aberrant obstructing arteries had cured the condition.

In the author's case division and ligation of the accessory inferior polar artery causing hydronephrosis gave complete relief from symptoms (intermittent pain).

Quinby cautions against division of the larger accessory arteries to the kidney pointing out the danger of degeneration of that portion of the kidney supplied by it, since there are no arterial anastomoses. Belt and Joelson have demonstrated experimentally in dogs the degenerative process and scar formation in the kidney parenchyma incident to blockage of the blood supply. Kummer (cited by Belt) did not observe any evidence of necrosis of the kidney subsequent to vascular section in fifty-six reported cases.

In cases of ptosis of the kidney associated with aberrant artery it is possible to perform nephropexy without disturbing the vessel. Quinby advocates ureteropyeloneostomy in some cases where the ureter extends above and is compressed by the aberrant vessel.

In performing any operation upon the kidney anomalous vessels may be encountered. Their recognition and ligation may prevent serious or troublesome hemorrhage during operation or even afterward. Eisendrath suggests careful exposure of both poles of the kidney before nephrectomy or nephrotomy, and cautions against tearing or dividing adhesions or fibrous bands without first inspecting and palpating (pulsation) for the presence of supernumerary vessels.

From a clinical viewpoint the ligation of accessory renal vessels when indicated to relieve ureteral obstruction, to aid in mobilization of the kidney, and prevent hemorrhage during operation is a correct surgical procedure and may be done without serious, if any, permanent impairment to kidney function.

It should be remembered that in operations upon anomalies of the kidney, variations in the blood vessels are the rule, and should be dealt with as suits the special condition.

CASE REPORT

Miss C. H., an unmarried woman, 40 years of age, was referred by Dr. Walter B. Schwuchow. This patient had an aberrant renal artery which had caused a hydronephrosis.

The history extended back over a two-year period during which time she had experienced a great deal of pain in the right kidney area, for the most part of an intermittent "colicky" character, and which usually was accompanied by gastric upsets. There was an absence of bladder symptoms or hematuria. An operation for appendicitis had been performed about one year previous, and it is reasonable to assume that a mistake in the diagnosis might have been made on account of the right-sided pain.

This woman was small, rather frail in appearance, and weighed only ninety-five pounds. An unoperated cleft palate produced a nasal twang to her speech and recalls the fact of frequent association of anomalous development in the same individual.

An attack had been in progress one week, at the time the patient entered the hospital, and had produced considerable toxemia, which gave her a pallor and haggardness of expression often seen in uremia. The right half of the abdomen was sensitive and rigid, and there was extreme tenderness elicited upon palpation for the kidney.

Two complete urologic examinations pointed to a hydronephrosis of the right kidney. No urine was obtained from the right kidney at either time, and the catheter on that side twice met an obstruction near the kidney pelvis (it was determined at the time of operation that a stricture near the ureteropelvo junction existed). A pyelogram showed a partially filled, enlarged (hydronephrotic) pelvis with indistinct calyces. Plain roentgenograms were negative for calculus. The cystoscopic study showed a normal secreting left kidney.

With a diagnosis of surgical hydronephrosis and possible pyonephrosis, a right kidney exploratory was performed. Under a gas-oxygen anesthetic the right kidney was easily exposed and mobilized through the usual oblique lumbar incision.

A large (one and one-half times the average size) smooth-surfaced kidney of normal texture was found. The kidney pelvis itself was about two times the normal size and filled with retained urine. The walls of the pelvis were thickened. The ureter joined the pelvis on its lower side near the inferior margin of the kidney and was distorted or kinked by a large aberrant inferior polar artery coming from the aorta which hooked back of the ureter. There was a definite thickening, sclerosis and narrowing of the ureter (stricture) at the site of compression by the anomalous artery.

The aberrant blood vessel was severed and ligated, the kidney replaced, and closure made, leaving a drain to the perirenal space.

Recovery from the operation was rapid (twelve days in the hospital), and resulted in prompt and complete relief from symptoms. There has been marked improvement in the general health with gain in weight and vitality to a state of apparent normal health, now five months postoperative.

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DISCUSSION

E. Spence De Puy, M. D. (532 Fifteenth Street, Oakland)—Dr. Farman's paper again calls attention to a condition which we must always have in mind. The urologist will, of course, generally be alert to discover the probability of aberrant vessels responsible for pain where there is a movable kidney.

When patients are as frequently referred for urological study as they are today, undoubtedly a correct diagnosis is more frequently made and a wrong surgical procedure thereby avoided.

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Frank Hinman, M. D. (384 Post Street, San Francisco)—Doctor Farman has very well emphasized the importance of aberrant vessels to the kidney. Their surgical importance is quite obvious to anyone doing renal surgery, as they should be recognized well in advance of their division in the enucleation of the organ. More recently they have, furthermore, become recognized as of importance as a factor in the causation of hydronephrosis. The profession, however, has seemed to have lost sight of the importance of movability in connection with aberrant vessels, and it is probably more the movability than the aberrant vessel that gives rise to the hydronephrosis. Anomalous vessels are to be considered with respect to kidneys in normal position as well as kidneys in abnormal position, and their significance as a factor in obstruction, pain, or periodic attacks of infection, is greater in connection with the abnormally placed kidney. They are also often a factor in cases of double pelves producing a hydronephrosis of the upper of the two pelves. In connection with the treatment of hydronephrosis in which an aberrant vessel is found in association, the fact that all arteries to the kidney are end arteries should be remembered, and there are cases in which it would be advisable to divide the ureter and resuture it rather than to divide the artery. In cases with

marked infection this, however, would not be a safe procedure because of the risk of a persistent urinary fistula.

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WALTER B. SCHWUCHOW, M. D. (4759 Hollywood Boulevard, Los Angeles)—Greater care in the differential diagnosis of appendix and kidney lesions is necessary, as appears in this case The history of pain in the right side lasting several days over a period of a year led to a diagnosis of appendicitis, and an operation revealed no pathology. The attacks recurred, and one sufficiently long brought her to the hospital for study. The x-ray report showed a distended kidney pelvis with probable destruction of kidney structure, while at operation a normal kidney was found.

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DOCTOR FARMAN (closing)—Probably no other organ in the body is more subject to anomalous blood supply than the kidney, this being due to the complicated series of changes through which the urogenital system passes in its embryologic development.

The importance of these vascular anomalies as a factor in the causation of hydronephrosis has been mentioned by Doctor Hinman. Likewise De Puy refers to the production of pain in movable kidney associated with aberrant or obstructing blood vessels.

The discovery and proper disposition of these abnormally placed renal vessels is essential to successful and conservative kidney surgery.

CHEST SIGNS SIMULATING ACTIVE PULMONARY TUBERCULOSIS*

By EDWIN A. MONTAGUE, M. D.
Livermore

DISCUSSION *by Frederick Eberson, M. D., San Francisco; Percy K. Telford, M. D., Ahwahnee; Joseph W. Cook, M. D., Banning.*

PHYSICAL examination of the chest often discloses signs suggestive of, but not produced by, active pulmonary tuberculosis. Unless rightly interpreted these signs may lead to errors in diagnosis.

MALFORMATIONS

Depressions above the clavicle, particularly if unequal or unilateral, are regarded as suggestive of pulmonary tuberculosis at the apex of the lung. In the classification of pulmonary tuberculosis adopted by the American Sanatorium Association, a slight depression above a clavicle is mentioned among the signs of early or minimal pulmonary tuberculosis. Bray,[1] of Raybrook, New York, in a study of 153 healthy adults and of 150 patients with incipient pulmonary tuberculosis, concluded that the value of this sign was open to question and stated, "These depressions are always present in emaciation and loss of weight, irrespective of cause. The depressions are always prominent unilaterally and cannot be differentiated in health from pulmonary tuberculosis." In a recent study of ten patients having tuberculosis in the left apex of the lung with no demonstrable infiltration of the right lung, I found seven of these cases had a depression on the healthy side.

Winged scapulae and unilateral drooping of shoulder are signs given by some diagnosticians as indicating late pulmonary tuberculosis. Far advanced patients usually have one or both of these signs, but many individuals who have normal chests exhibit this anomaly.

If the *shape of the thorax is changed by deformity* the condition may be congenital and, if slight, is difficult to detect. One side of the chest is prominent anteriorly and posteriorly and flat along the axillary line. A clavicle may show depression above, the vertebrae may be displaced laterally and sometimes are rotated anteroposteriorly. The result is prominence of the ribs on the convex surface and a slightly forward position on the concave surface. This bulging in and out deformity causes deficient expansion and a lagging of one side of the chest. Tactile fremitus is usually increased, but it is decreased if compensatory emphysema is present over the enlarged side of the deformity and is usually decreased over the compressed area. The percussion note is impaired, the breath sounds are exaggerated over the emphysematous side and decreased on the compressed side. In some patients, râles are elicited owing to the emphysema, or some adventitious sounds may be produced from other causes. These signs, reinforced by constitutional symptoms with added languor, are often misleading.

A deformity of the sternum or of the anterior ends of the ribs will cause a flattening or marked depression in the upper chest similar to that caused by a diseased lung or by a massive fibrosis. Unilateral atrophy of muscles over the chest wall, whether congenital or caused by some wasting disease other than tuberculosis, will show, on inspection, a unilateral depression, and the percussion note between the sides is impaired. If the individual happens to be a mouth breather or has nasal obstruction or catarrh, râles that resemble those of active pulmonary tuberculosis often can be heard in the apices, after expiratory cough and inspiration.

RÂLES

Friction râles occur in the pleura around the pericardium and are an indication of dry pleurisy of the lingula and of other parts of the pleura in contact with the pericardium. These râles are heard during both phases of the respiratory act. In many cases it is quite difficult to state positively whether these adventitious sounds are of pulmonary or pleuritic origin. If they are found over an extensive area it may be assumed they are pleuritic in origin, since much involvement would cause severe constitutional symptoms, while dry pleurisy may persist for years without impairing the general health.

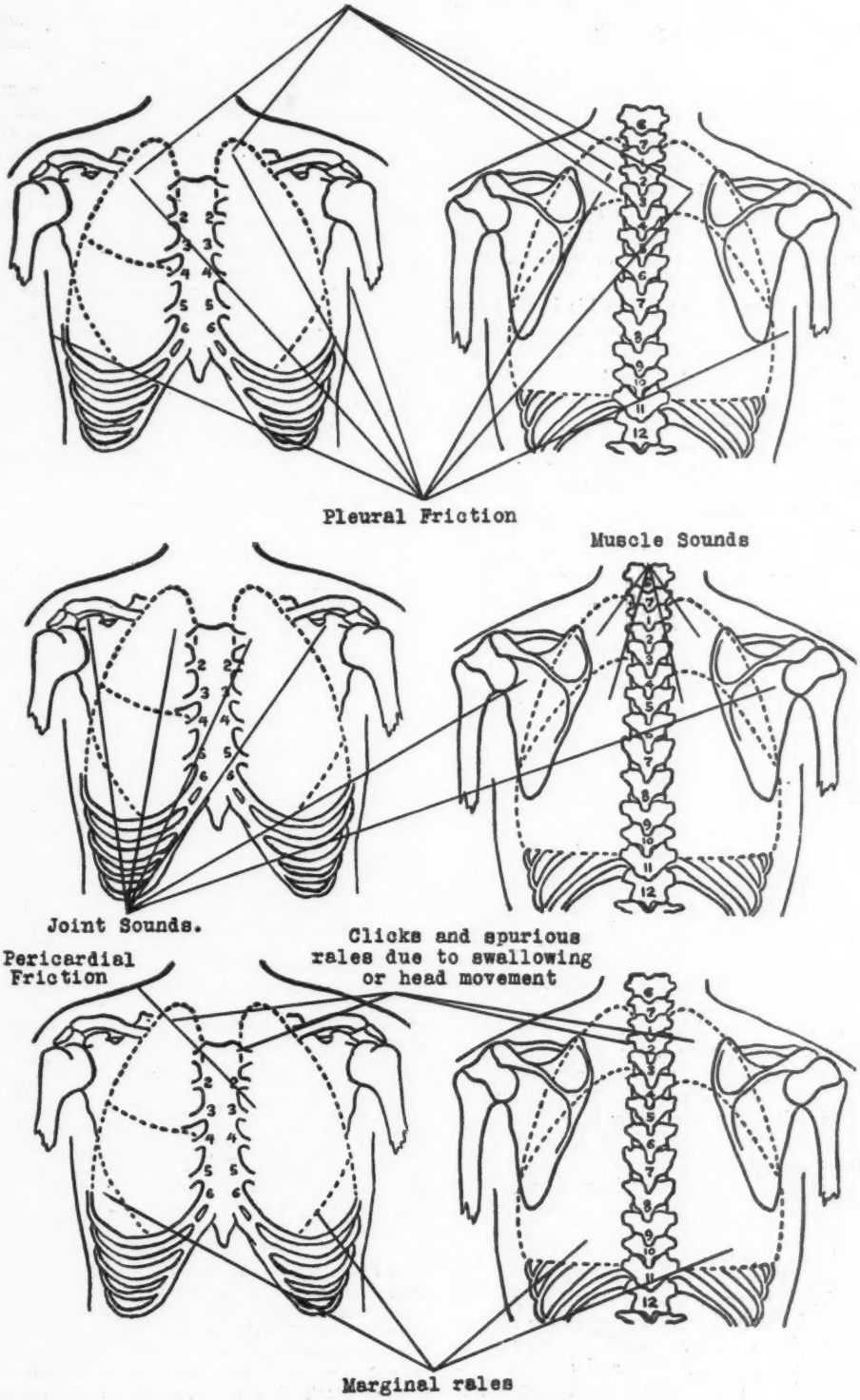
Aortic aneurysm, with pericarditis, plus syphilis, gives a physical picture similar to that of active pulmonary tuberculosis. Someone has said that most syphilitics have râles in the chest. Personally this also has been my observation, but I can give no explanation as to the etiology of these râles.

In many *bedridden patients,* râles may be detected which are caused by imperfect expansion of the lungs, not due to disease.

In some patients, *after cough* and at the end of inspiration or when the individual swallows, clicks and spurious râles occur. These adventitious

* From the United States Veterans' Hospital Staff, Livermore.

Râles Heard in Chest, Found in Catarrh, Nasal Obstruction and Mouth Breathers



Charts illustrating sites of spurious râles.

sounds are heard above the fourth dorsal spine and are often mistaken for an active lesion of the lungs, especially if these râles are accompanied by constitutional symptoms associated with focal infection or some obscure disease.

Marginal râles heard in the lower margin of the lungs are caused usually by a stripping of the pleura from the diaphragm. These usually disappear after a few deep breaths, though at times persist indefinitely, but, as they occur in the bases of the lungs, do not give much concern if one is looking for pulmonary tuberculosis.

In auscultation, *crepitation of the dry skin and hair* on the chest is annoying, and often it is necessary to soap or oil the chest to eliminate such sounds.

The late Colonel Bushnell,[2] in his book, "Epidemiology of Tuberculosis," devotes considerable space to *spurious râles, muscle and joint sounds,* and attributes their cause to muscular contraction, especially the trapezius and pectoral muscles when raising and lowering the shoulder in the act of very deep breathing. He also states that sounds originating in the sternum at the second costal cartilage and along upper dorsal vertebrae may lead to error. They resemble the medium and large râles of pulmonary tuberculosis and are accentuated by cough. These were a potential source of error during the late war, and those engaged in tuberculosis work have observed errors in diagnosis possibly caused by these adventitious sounds. Normally the breath sounds above the fourth rib and sixth dorsal spine on the right are slightly bronchovesicular, and, if by chance there is a slight deformity from early rickets or other causes, the bronchovesicular breathing is apt to be very pronounced, and, if joint and muscle sounds are present and persist, barring the x-ray and laboratory examinations, a hurried diagnosis of active, pulmonary disease may be made.

Dr. J. T. King, when examining soldiers for tuberculosis, looked for joint and spurious sounds. He kept notes on 819 men who had spurious râles in the upper part of the chest. Most of these sounds emanated from the scapular, costosternal, sternoclavicular and vertebral articulations and from the joints of the shoulders anteriorly. Two per cent had persistent, constant, apical clicks or crackles of the type which often prove confusing. A number of these men were hospitalized for active, pulmonary tuberculosis, but, after observation, were told they did not have pulmonary disease. It surprised them, as they had been diagnosed tuberculous and hospitalized for months for active, pulmonary tuberculosis.

Bruns[3] maintains that râles have always presented the most perplexing signs in the physical examination of the lungs. Râles elicited by expiratory cough and inspiration are generally accepted as an important sign of active pulmonary tuberculosis. He says showers, or fine and medium râles of equal size occurring at the end of a full inspiration, or the so-called coughing râles, are not always associated with active, inflammatory process in the parenchyma or bronchi, but may be due to conditions such as *fibrosis, atelectasis, pleurisy, postinfluenza, pneumonia, or of tracheal or bronchial origin,* and cannot be said to be associated with any particular disease or pathological condition.

In the examination of patients, not infrequently, as the pulmonary lesion clears up and heals, the râles disappear, but in many cases these persist indefinitely after the disease has become arrested and apparently cured and the radiograph reveals fibrous tuberculosis, in which event the râles of the cured case are identical with the râles of the active one. If there are no more supporting clinical data, the râles heard in these cases have no significance.

It is impossible for the skilled physician to tell by the shape of the thorax, mobility and physical signs whether there is a fresh exudative process or an old scar or whether there has ever been any pulmonary tuberculosis unless substantiated by complete history and symptoms such as elevations of temperature, increased rapidity of pulse, fatigue, languor, loss of weight, correlated with laboratory and x-ray findings.

Modern experience has greatly discounted the importance formerly attached to physical signs in active pulmonary tuberculosis.

United States Veterans' Hospital.

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DISCUSSION

FREDERICK EBERSON, M. D. (University of California Hospital, San Francisco)—The review by Doctor Montague of puzzling chest signs simulating active pulmonary tuberculosis emphasizes the difficulties encountered in physical diagnosis of chest diseases. One is at a loss to decide which does the greatest harm, a diagnosis of tuberculosis when it does not exist or the failure to diagnose its presence At all events, the criteria will establish either a poor or a reliable guide for the practitioner. Perhaps most of these pitfalls may be avoided by paying more attention to clinical evaluation of the history, signs and symptoms as a whole than to a few findings.

Laboratory aids, of course, have their important function also and the use of tuberculin should be encouraged. The problem of diagnosis in tuberculosis has been simplified greatly in recent years by the judicious application of the subcutaneous diagnostic tuberculin test. The method, which is simple and safe, has proved its value in the hands of those who understand and follow the exact technique. Better criteria can hardly be found than those of constitutional and focal reactions attending the injection of small doses of tuberculin in patients with suspected tuberculosis that cannot be proved beyond doubt.

Although no mention of it has been made in Doctor Montague's article, another point may be of interest in connection with the differential diagnosis of pulmonary disease. In practice we very often see patients with physical signs simulating pulmonary tuberculosis, usually of the right top. A moderate degree of constitutional disturbance is often present and signs and symptoms seem to warrant a diagnosis of tuberculosis. The x-ray film in such cases usually shows a small patch of what appears to be pulmonary involvement. Invariably, however, on closer question-

ing, one learns that these patients suffer from postnasal discharge and some form of upper respiratory involvement. A tuberculin diagnostic test made according to the standard technique as practiced at the Trudeau Sanatorium results negatively and, with the clearing up of upper respiratory difficulties in such persons, the x-ray picture no longer shows the peculiar focus previously diagnosed as tuberculous.

Doctor Montague concludes that modern experience has greatly discounted the importance formerly attached to physical signs in active pulmonary tuberculosis. This statement may be interpreted in different ways. Presumably the diagnostician is expected to use rare judgment at all times.

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PERCY K. TELFORD, M. D. (Ahwahnee Sanatorium, Ahwahnee)—This paper, by its elaboration of signs simulating those of tuberculosis, emphasizes again the importance of considering every item of information regarding the patient in making the diagnosis. We have been frequently warned against the custom of the past of regarding typical râles as evidence of active tuberculosis, and this point is well covered here. The râles of spirochetosis might be added to this list of spurious râles that sound typical, for I find these most confusing. However, a routine of diagnostic maneuvers that places the search for râles as the last step facilitates identification and proper evaluation of râles. A previous survey of the breath sounds is particularly helpful.

A wrong impression might be gained from Doctor Montague's conclusions. The value of physical signs seems to be discounted too greatly. The difficulties encountered in the diagnosis of tuberculosis are comparable to those in other fields of medicine. The suspicious, or seemingly positive signs, unsupported by symptoms or laboratory findings require a search for the real cause, but their great aid cannot be denied and the development of skill in eliciting these signs should be encouraged. An enumeration of the pitfalls encountered, as set forth in this paper, makes for more accurate interpretation of physical signs. That is no doubt the purpose of the paper and the impression that these signs might safely be neglected is not meant by the author.

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JOSEPH W. COOK, M. D. (Banning)—I think Doctor Montague's article is very timely, as I feel that every man doing tuberculosis work is very much puzzled at times as to what certain signs mean. Some patients are difficult to examine: for some have heavy muscles, some bony chests, some hairy chests, and some cannot let their bodies or chests go, cannot relax, but tighten their chest muscles and, on coughing, start so much vibration that all kinds of râles can be heard. Some swallow persistently, and I now warn my patients that a wrongly timed swallow may send them to a sanatorium with a diagnosis of pulmonary tuberculosis.

I presume that every man who does tuberculosis work frequently faces the situation in which a patient informs him that his doctor says that he has a spot or cavity somewhere in his lungs, when the specialist can find nothing. Men who do only x-ray work I feel are somewhat prone to diagnose tuberculosis from hilum shadows and tell patients they have tuberculosis. In such a situation, one is likely to question one's own judgment or ability and perhaps acquiesce, but I feel it is only right to examine the patient on two or more occasions and then say frankly that you can find no evidence of tuberculosis.

In Doctor Montague's assertion that "modern experience has greatly discounted the importance formerly attached to physical signs in active pulmonary tuberculosis," I feel that he undoubtedly refers to the border-line signs, such as dropped shoulder, depression above and below clavicle, marginal râles, muscle and joint sounds, etc.; and he has rendered us a service in reminding us of this fact which will keep us from snap diagnoses.

Once again it may not be out of place to recall the five cardinal signs given by Lawrason Brown by recognition of which 95 per cent of cases of tuberculosis can be definitely determined: (1) positive sputum; (2) definite hemoptysis; (3) definite pleurisy with effusion; (4) definite localized râles on cough above level of third rib at apex; (5) definite x-ray changes in same area.

I would call attention to the use of the word "definite" by Lawrason Brown. He apparently would condemn no one to a sentence of tuberculosis on any indefinite signs. Only one of his five cardinal points has to do with physical signs, and that sign must be so definite that it allows of almost no doubt.

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DOCTOR MONTAGUE (closing)—It has been the rule with the staff of this hospital to give the five cardinal points, as referred to by Doctor Cook, consideration, with special emphasis on definite, localized râles and x-ray changes.

PLASTIC SURGERY OF THE FACE*

By J. PAUL DE RIVER, M. D.
San Francisco

DISCUSSION *by George Warren Pierce, M. D., San Francisco.*

SKIN-GRAFTING and the method of transferring the skin are the paramount problems encountered in the majority of plastic operations. The selection of the site from which the skin is to be taken and the condition of the area to which it is to be transferred are factors that require careful study.

GENERAL PRINCIPLES IN PLASTIC SURGERY

For the purpose of description we may say that all skin flaps consist of two parts—the pedicle, used chiefly for carrying the nourishment to the graft, and the part to be used for the graft itself. Skin grafts are classified under three main types, namely, the detached, the pedicle, and the tube pedicle.

The detached graft is of great value in repairing small defects where an abundant blood supply is furnished to the surrounding parts. It is especially useful in plastic work about the head and face.

In restoring an eye socket the detached Thiersch graft taken from the arm or thigh after Esser's technique, lends itself admirably. Also we can be reasonably sure of its taking. This, too, holds good in relining the mastoid and middle ear cavities. The detached, full-thickness graft, as described by Wolfe, is of value in repairing brows or lids where it is desired to transfer skin carrying the hair follicles. The success of the detached graft depends on two things, namely, an abundant blood supply to the region and careful approximation of raw surfaces, assisted by the use of the pressure bandage or dental stent.

The simple pedicle graft should be used only for the repair of defects about the head and face because an adequate blood supply can be secured. This graft serves well in rhinoplasty, blepharoplasty, and cheiloplasty, its success depending on

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the nourishment and the coaptation of the edges of the wound. The chief disadvantage is the additional disfigurement caused by taking the skin from the face.

In dealing with wounds or disfigurements resulting from traumatic or pathologic causes, and where the loss of skin is great, the principle of tubing the pedicle, as described by Gillies and his coworkers, is undoubtedly the method of choice. In this method the skin may be transferred from any part of the body in one or several steps, as in the migrating or caterpillar grafts. In the latter method the source and direction of the blood supply is changed each time the existing free end becomes the base.

The limitations of the use of the tube pedicle graft have not been reached. It may be utilized in repairing feature loss to transfer skin from other regions, thereby eliminating further facial disfigurements. Ulcerated areas rendered clean, and burn contractures freed of scar tissue, can be repaired by the use of the tube pedicle flap. In the repair of not only the superficial parts but also where there has been a loss or destruction of deeper structures, these grafts may be fashioned so as to carry hair, blood vessels, cartilage, bone, fat, mucosa and connective tissue. With this in mind we can utilize this type of graft to repair nasal disfigurements. Bone or cartilage can be previously embedded in the graft and allowed to grow. In due time it is swung into place, the cartilage serving as the bridge. This method is also applicable to the reconstruction of the chin. Fat-bearing flaps from the buttocks may be used in the repair of the female breast following a radical amputation.

The judgment of the surgeon is a point that cannot be too strongly stressed. A thorough knowledge of the anatomy is essential, as the viability of the graft depends on the blood supply. Therefore it behooves the surgeon to understand the blood supply of the part from which the tube flap is to be fashioned. When possible a definite artery should be included in the flap. One should bear in mind the size of the flap to be taken, its length and breadth. The base should be as wide as any part of the flap, and the length varies with the width and thickness. This can be somewhat modified if the jump or interrupted tube flap method is employed. By so doing the graft is not dependent on its pedicle base alone for its blood supply, but receives an additional blood supply from the lateral attachments of the tube. We are further able to fashion tubes of considerable length, thus making possible the transfer of skin from distant regions.

The jump or interrupted tube flap method is as follows: Two parallel incisions are made through the skin, superficial and deep fasciae, as in the ordinary method, and carried three and one-half inches (nine centimeters). Then there is a jump of one-fourth of an inch (five millimeters). The incision is carried for another three and one-half inches and followed by another jump of one-fourth of an inch. This method enables one to prepare tubes of an indefinite length with a reasonable certainty of safety, because of the nourishment furnished the tube from its lateral attachments as well as the proximal and distal ends. In dealing with long tubes they are liable to become twisted. This method serves to immobilize them. At the desired time the small laterally attached areas are cut and sutured with fine catgut or horsehair. The proximal or distal end is detached and transferred to its new position.

PLASTIC PROCEDURES IN VARIOUS DEFORMITIES

Auricle Restoration—In considering the operative procedure for the restoration of an auricle, various methods have been tried and most of them proved disappointing. I have found that by using a modification of Szymanowski's technique a fairly good-looking ear can be constructed. He advises the use of the skin which is posterior to the auditory canal. The incisions are made posteriorly to the canal. The flap is dissected up and doubled upon itself posteriorly. It is then brought forward and placed in the desired position and sutured through and through so that the edges will heal together. The denuded area back of the newly formed ear should be skin-grafted before healing can be hoped for. Detached, full-thickness grafts were formerly used, but due to the lack of blood supply they did not always prove successful. However, if the tube pedicle flap from the side of the neck is used and the pedicle allowed to remain attached to the neck just below and posteriorly to the angle of the jaw, skin-grafting of the granulating raw surface may be handled with more assurance of success. In this manner sufficient skin can be removed from the posterior angle of the neck and swung up into place to cover the denuded area. The graft carries an adequate blood supply that assures its vitality. The neck skin is undermined and the edges closed with dermal and relaxation sutures of silkworm gut. At the end of ten days, or after circulation has been established in the graft, the pedicle is severed at its base or lower end. A small portion of the tube is split; one edge is attached to the side of the head, the other to the anterior superior end of the newly formed ear, after Szymanowski's method. The pedicle is again severed at its base and partially split throughout its length. The split or undersurface of the tube is sutured to the original postauricular flap, forming the helix. The lower or free end of the tube is sutured to a prepared area, posteriorly and inferiorly to the auditory meatus, and serves as the lobule of the newly formed ear. Provided the middle and internal ears are intact, it is surprising to note the increase in hearing, for the newly formed pinna aids materially in conducting sound waves to the middle ear.

Restoration of Eye Socket—An obliterated eye socket can be repaired, making possible the wearing of an artificial prosthesis. For this I use the following procedure. The lid margins, if adherent, are separated by an incision and dissected free from the orbital contents. As the graft must adhere to the periosteum and anterior aspect of the orbital region, the dissection should be carried outward and low, well under the orbital margin. On the nasal side the dissection should be car-

ried well up to the orbital margin, above and nasally to the anterior crest of the lachrymal groove. In dividing the tissues above, dissection should be carried beyond the orbital rim. All cicatricial and granulation tissue should be removed, making sure the lid margins are not too thick.

With the bed for the graft prepared and all hemorrhage controlled, a small square of dental moulding compound is immersed in hot saline solution for thirty or forty seconds, then put into the cavity to take an impression. After it has hardened it is removed. A thin layer of epidermis (Thiersch graft) is secured. For this I prefer the arm or thigh, and enough should be procured to cover the dental moulding compound, leaving the raw surfaces outward. The impression compound with the graft around it is then gently placed in its bed, leaving the overlapping edges outward. The eyelids are closed and a pressure bandage applied and reinforced with adhesive tape. The dressing is changed on the seventh day and the wound dressed every third day thereafter. The dental moulding compound is removed on the eighteenth day, the graft remaining. This procedure is usually successful and furnishes an eye socket completely lined with epidermis.

Cicatricial Ectropion—Cicatricial ectropion is a condition frequently encountered. Ofttimes only one lid is involved, and that is usually the lower lid. The technique of the operation for this is as follows: An incision is made parallel to the distorted lid margin. All scar tissue is dissected away and hemorrhage controlled by pressure. After completing the primary dissection it is necessary to dissect up small portions of epithelium on the upper and lower lid margins. Approximation of the raw surfaces is maintained by mattress sutures. These sutures are passed through small pieces of rubber tubing, overlying the skin of both upper and lower lids near their margins, and tied so as to secure apposition of the raw surfaces. The result is that adhesions are formed between the two lids, thus maintaining the lower lid in position. A skin graft is taken, preferably from the upper lid where sufficient skin can easily be obtained to make an ideal inlay of true skin. No allowance need be made for contraction when this graft is used. A fusiform or semilunar design is convenient and is removed with a small scalpel or cataract knife, handling the graft as little as possible. All fragments are snipped off the graft before setting it in place, and fine horsehair or dermal sutures used to hold it in place. A pressure bandage is applied, first placing a small piece of rubber tissue impregnated with vaselin over the wound, and gauze fluffs, held in place with adhesive tape.

The dressing is taken off on the fifth day, the sutures removed and the graft cleansed with a weak solution of boric acid. The wound is dressed every other day for a week. About three weeks after the operation, light massage with sterile vaselin is advised. The adhesions between the lids are allowed to remain for two or three months, then cut with scissors.

Ciliary Line Restoration—Sometimes it becomes necessary to restore the ciliary line or part of it. The site of preference for securing this graft is the nasal end of the undersurface of the eyebrow. Or if the entire ciliary line has been lost, slit the eyebrow, using a longitudinal incision, and remove the desired amount. In suturing the graft in place it is advantageous to invert it so the hair on the graft will match as nearly as possible the cilia of the opposite lid. The same precautions are adhered to in this as were advocated in the cicatricial ectropion.

Rhinoplasty—Where grafting is essential for the formation of the bridge of a nose, a variety of material may be used and likewise prove unsuccessful with the exception of bone and cartilage. When bone is used in rhinoplasty it is usually procured from the rib, tibia, or ilium. Blair has employed a portion of the scapula in certain cases, and the third digit where there has been a total loss of the nose. The seventh, eighth and ninth rib and xyphoid cartilage offer selective sites in cartilage grafting. In all instances it is important to preserve as much as possible of the periosteum and perichondrium. Fixation of the graft and proper approximation of raw surfaces must be assured, and may be aided by the use of splints, sutures or pressure bandages.

Superficial scars of the nose should be repaired with skin from some part of the face. The upper eyelid makes an excellent match, and leaves no disfigurement following the removal.

The various deformities of the nose present a distinct problem to tax the ingenuity of the surgeon. Anatomical variations due to traumatism should be separated from changes resulting from constitutional diseases, such as syphilis. Diseased conditions should be looked for and rigid treatment carried out before undertaking operative procedure. The internal route is preferable as it leaves no scars. Assuming that the field of operation has been prepared, all types of defects can be prepared by using these incisions. An incision along the pyriform opening of the nose, beginning at the nasal bone, is carried downward and outward through the mucous membrane and chondro-osseous junction. The periosteum, subcutaneous tissue and skin are separated from the bone, liberating the entire area extending from the root of the nose over the nasal bones and superior maxillae. A second incision is made, beginning at the nasal bone and carried downward and forward to the tip of the nose. This incision is parallel to the bridge of the nose and is carried through the cartilage up to the perichondrium overlying the nasal bridge. A third incision is made from one nostril to the other, starting at the tip of the nose where the second incision terminated and carried backward along the lower border of the quadrilateral cartilage to the nasal crest of the superior maxillary bone and through the mucous membrane and cartilage. The fourth incision is made through the lower lateral cartilage at the point where the cartilage bends upon itself.

Cleft Palate—Let us now consider the cleft lip and palate. Of all the deformities that befall mankind these, to my mind, are about the worst. If allowed to remain uncorrected they jeopardize

the patient's life in a twofold manner, namely, physically and mentally. The life of an infant thus afflicted is endangered by its not being able to take nourishment properly. As the individual grows older this physical imperfection helps to retard the mental development, sometimes to the extent that the patient is classed as mentally deficient.

Regarding the etiologic factors responsible for these conditions, so far we have only been able to theorize. Therefore I shall confine my discussion to the surgical treatment, to which Brophy has contributed so much.

The cardinal principles involved in the operative procedure may be enumerated in the order of their importance. First, the establishment of the normal function of the tissues. Second, the correction of the associated deformities. Third, the proper postoperative results.

In order that these desired principles may be carried out the surgeons should know when to operate. This question has been frequently debated. I believe it has been generally agreed that when the maxillary bones are involved an aim to unite them should be made as soon as possible. This may be done by mechanically forcing the anterior portion of the maxillary process and premaxillary process into normal position. This procedure straightens up the nose, which is usually deflected to one side because of its attachment to the vomer. It brings the maxillary process into normal relation so that the eruption of the teeth will take place in the proper alignment, and also closes up the anterior portion of the palate, thereby allowing the child to take its nourishment normally.

If these cases can be seen in early infancy, before three and a half months, pressure with the thumb and fingers will force the parts together. They can then be held in place with a twenty-gauge wire which is passed through the maxillary processes on either side just anteriorly to the malar process. These wires are passed high up, emerging on the nasal surface of the palate and twisted together on the palatine surface. Approximation in older patients is hindered by the deposition of calcium salts in the tissues. If this closure is not secured before the bones have become ossified the procedure becomes more difficult. And if the teeth have erupted it changes the whole picture and defeats our aim to restore the tissue to normal function.

In the first procedure we reduce the cleft from a cleft involving the hard and soft palate to a cleft of the soft palate involving only a portion of the hard palate. Those presenting a double cleft palate and lip with a protruding premaxillary process are the most difficult to handle. Let me here mention a vicious procedure that is practiced by some operators, namely, that of cutting off the premaxillary process in order the more readily to effect a closure of the associated cleft lip. They sacrifice the incisor teeth as they develop in this process. This results not only in the loss of the incisor teeth, but also in a deformity of the upper jaw because of the sagging or depression of the anterior of the maxilla. The premaxillary process should be preserved and forced into normal position. This is accomplished by cutting the vomer, which permits the premaxillary process to be forced into its normal position where it is retained by means of silver wire.

In cases where the osseous portions have been primarily approximated, or where the soft palate alone is involved with possibly a small portion of the hard palate, I am inclined to utilize solely the mucoperiosteal tissue to form the flaps to close the cleft palate. It is therefore desirable that this tissue be allowed to develop until just before the time the child begins to form its first words, which is usually around the twentieth month.

The technique which I shall briefly describe for closing wide clefts of the soft palate involving a portion of the hard palate is practiced by Lyons of Ann Arbor, and may be termed a modified Lane.

The operator begins by dissecting up the mucoperiosteum and elevating it from the hard palate, commencing at the outer margin of the cleft unattached to the vomer. The aponeurosis of the soft palate is freed from the palatal process of the maxilla on this side only, which forms a single flap running from the anterior part of the cleft to, and including, the palatopharyngeus muscle. An inverted flap is fashioned on the opposite side of the hard palate by making a longitudinal incision, beginning at the junction of the hard and soft palates one millimeter to the lingual of the gingivolingual margin of the third molar and running forward to a point five millimeters anteriorly to the anterior portion of the cleft, keeping one millimeter to the lingual of the gingivolingual margin of the teeth. A curved periosteotome is used for this purpose. The mucoperiosteal flap is raised up from the bone and inserted under the margin of the flap from the opposite side and sutured with a mattress suture. This acts as a stay-suture. Coaptation of the two flaps is made with interrupted sutures, dermal being used, as the tissues react well to them. Relaxation of the soft palate is made by a horizontal incision two centimeters in length posteriorly to the tuberosity. This incision is packed with iodoform gauze and allowed to remain for four or five days.

The postoperative care is important. The patient should be kept in bed for two weeks and not allowed to talk. A recumbent position prevents the mucus that forms on the nasal surface of the palate from remaining and aids in the drainage back into the throat. A spray of normal saline is used in the nasal and oral passages as a cleansing solution. The sutures are removed at the end of ten days. The patient is allowed liquids only at first, increased to a soft diet during the period of convalescence.

GENERAL CONSIDERATIONS

The gravity of these operations must ever be borne in mind. A thorough search for status lymphaticus should always be made and proper treatment instigated before any operative procedure is undertaken. No attempt at surgical repair of the defects should be made while the weight curve is on the decline. The surgeon should be

watchful in the postoperative as well as the preoperative care.

As a preliminary to any plastic operation, all infections must be eliminated and sequestra, resulting from osteomyelitis, cleared up. Constitutional diseases, such as syphilis and tuberculosis, should be dealt with by the use of proper therapy. The ability to use instruments when possible is advantageous, as digital manipulation of the grafts leads to necrosis and favors secondary infection. Careful approximation of raw surfaces, with as little tension as possible, is important. Use fine suture material. Horsehair for cutaneous sutures is preferable. Hemorrhage should be controlled by pressure when possible, thus avoiding the necessity of burying sutures and the chances of infection.

The acid test of a plastic surgeon is his ability to form a flap in large defects, to transfer it from a distant part of the body and successfully place it in its new position. The surgeon should not be tempted to try too much at one sitting. It is better to proceed step by step and observe how nature follows the indicated way.

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DISCUSSION

GEORGE WARREN PIERCE, M. D. (490 Post Street, San Francisco)—This paper has quite thoroughly covered an extensive field. The multiplicity of details of technique so essential to success in plastic surgery has of necessity been limited, but has been sufficiently described to give opportunity for that friendly difference of opinion as to procedure, which difference makes for ultimate progress in this new specialty.

We are learning daily new uses for Gillies' tubed pedicle flap. The number of step-ups of the flap seems to have no limit, and the skin and fat at the final step have retained their normal characteristics. In two cases I have transferred large flaps from the abdomen to the foot, stepping down to the thigh, then to the opposite calf, then to the foot. Where an abundant fat pad is needed this is the only method available. I have not tried Doctor de River's jump tubed flap method, as no difficulty has been found in my experience in tubed flaps as long as fourteen inches. It may have its uses, but I cannot see how the amount of blood circulating through one-fourth-inch strips of skin can have very much effect on the circulation of the pedicle. It has the added disadvantage of opening additional areas for infection, one of the greatest foes of the tubed pedicle in its first stage.

In reconstruction of the auricle, Doctor de River has not mentioned the use of cartilage as a support to the newly formed organ. Most of the reconstructed ears I have seen have had the distressing characteristic of shrinking after completion. I feel that it is more important to have two ears of the same relative size than to reproduce all the finer intricacies of structure of the auricle. With this in mind I now use a rib cartilage implant under the scalp, in a direction upward and slightly backward from the external auditory meatus. A small diameter tubed pedicle is constructed on the neck. Then an incision is made in the scalp in the shape of the proposed ear, this flap is freed and an epithelial inlay placed behind the flap. Ten days later, when the wax is removed, the flap will stand out at the angle to the head occupied by the normal ear. This flap is finally surmounted by the tubed pedicle to give the effect of the rim. This ear will not shrink and at a few paces distance has the appearance of a normal ear. Finer details of contour of the helix can be obtained by the implantation of smaller pieces of cartilage in the scalp flap.

As to the cleft palate I prefer the Brophy type of operation throughout to any other, as it most closely follows the anatomical and physiological requirements of this deformity. I do not like the Lane type of operation because it is destructive to the palatal musculature, it causes irreparable loss of tissue if unsuccessful, and it jeopardizes the palatine artery, the principal blood supply to any palatal flap, on the inverted flap side.

THOUGHT, IDEAS AND FUNCTIONAL SYMPTOMATOLOGY—AN ATTEMPT TO DISCOVER AN ORGANIC BASIS THEREFORE*

By ROSS MOORE, M. D.
Los Angeles

DISCUSSION *by Nathaniel H. Brush, M. D., Santa Barbara; Eva Charlotte Reid, M. D., San Francisco.*

THOUGHT is a real thing. It therefore must come from somewhere. It does not develop outside the human body and proceed into it. That is clear.

Thought cannot be purely a nerve cell secretion, an exudate from the central nervous system as bile is from the liver. But even if it does exude in some such psychologically fantastic manner, an ultimate origin for the materials of thought and intellection must nevertheless be sought until found if one is really an earnest seeker after the whole biologic truth.

THOUGHTS AND IDEAS

Thoughts and ideas concerning the outer world do not originate *de novo* inside us. Evidence concerning our external surroundings must reach us through our sense organs, before we can begin to think about them or include them in our circle of intellectual activities. In an exactly parallel manner, ideas concerning the inner world cannot be elaborated by the human intellect except as evidence is brought to it from all parts of the human body. At birth the organs of human intellection are so rudimentary that they only register and record somatic evidence without being able to understand what such evidence means. Thus a very young babe will cry if a pin pricks it, but is not able either to analyze the unpleasant stimulus or to locate its origin. The baby cannot think about pain, but it can react to pain stimuli.

Thinking is a definite function largely residing in the human brain and spinal cord. The neural activity which results in thought is secondary in nature, not primary. The brain and spinal cord correlate stimuli received from the outside world with those coming from the world within the human organism. The only materials of thought which the brain and spinal cord actually originate are stimuli of the same order as those which originate in all other body cells. It is reasonable to think of memory as a special product of nerve tissue, parallel in its essential biological attributes to the products of any other definitely differentiated body tissue. Thus memory might be con-

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sidered as a specialized product of nerve tissue just as suprarenalin is of the suprarenal gland.

THE SENSORIUM

For the sake of brevity, the central area of stimuli correlation and thought production will hereafter be referred to as the sensorium.

The stream of human consciousness consists of multitudinous stimuli coming into the sensorium from outside the body and other multitudes coming to the same place from inside the body. In the sensorium they come into relationship with each other and with memory pictures. The whole mobile mass is constantly analyzing itself and synthetizing itself, turning impressions into ideas, ideas into thoughts, thoughts into conclusions, and conclusions into actions.

Human voluntary activity is the visible, tangible result of human thought.

Human thought, on the other hand, is the final product of the correlation, the modification and the synthetization of primary stimuli coming to the sensorium from both inside and outside the human body.

External stimuli are easily traced direct to their origins.

Internal stimuli may also be traced to their origins by philosophical and physiological deduction. They come from every part and portion of the body and are transmitted to the sensorium by the afferent nerves. Their ultimate origin is the ultimate structure of every organ and department of the body.

Thus it becomes evident that knowledge of ourselves does not result from some mystical and unexplained function of the human brain and nerves. It comes direct from the body itself. It is an inner consciousness which doubtless is more exact than our unconscious knowledge of the external world.

For the purposes of this argument it is only necessary to trace internal impressions to their ultimate origin.

EXTERNAL IMPRESSIONS NEED NOT BE CONSIDERED

All cells of the human body have a common cellular ancestor—the primary mother cell or ovum. They inherit like potentialities, albeit some are sometimes of very rudimentary type. By reason of their long and close association together and their hereditary cooperative tendencies, every body cell is sensitive to the state of biochemical, molecular and biophysical well-being of every other cell with which it is connected either by contact or through the nervous system.

Individual cells are thus sensitive to each other, while great cell masses like the liver are constantly sending to the sensorium very definite and strong evidence of their mass condition. The general sense of well-being or ill-being, which is always present in the human personality, is merely the summation of these somatic evidences and the moulding of them into a more or less vague conscious impression.

HUMAN INTELLECTION

The argument thus far developed may be stated concretely as follows: Human intellection is a function of the human sensorium. Its primary or ultimate origin is tripartite: (1) external impressions; (2) internal impressions; and (3) memory impressions.

To continue, internal impressions constantly arrive from every part of the body, bringing to the sensorium a stream of evidence relating to bodily tone and condition. This evidence is transformed in and by the sensorium into an uninterrupted stream of somatic knowledge—a sense of the personal ego.

THE PERSONAL EGO

Bodily pain furnishes a very simple and self-explanatory illustration of the transformation of internal impressions into a sense of the personal ego. Take the pain of pleurisy, for instance. It is due to frictional irritation of inflamed pleura. Infection brings about this inflammation. Irritation develops when respiratory movement occurs where inflammation is located. Next, irritation stimuli are transmitted to the sensorium and are there transformed into evidences of pain. Finally a pain idea rises into the acute consciousness.

A less evident sequence is one discovered centuries ago and named melancholia—black bile. Possibly some future biochemist will succeed in unraveling the ultimate molecular constitution of normal and pathological bile. Then possibly the diagnosis of melancholia will be transferred from the sick room to the laboratory. The persistence of the word "melancholia" as the characteristic name by which a certain type of depression is identified is a sort of historical evidence tending to suggest that wrong liver function and mental depression are related to each other as cause and effect.

Other and less tangible sequences are easily constructed on the basis of the theory that consciousness and intellectual activity have their primary nidus of origin in the various differentiated tissues of the human body.

For example, a virgin develops the belief that she is pregnant. In such a case either one of two sequences may be present.

The first sequence is initiated by the development of a fibroid tumor inside the virginal uterus. A sense of uterine fullness results, which is at once transmitted to the sensorium. It rises into consciousness as a vague but a very real, new quality of sensation in heretofore unused sex parts. This new sensation stirs up three unusual types of memories. First, memories concerning the location of unborn babies in the mother's body (these are the result of early training and youthful observation); second, biological memories which take the form of imperious longings for motherhood; third, distorted memories arising from lack of proper information regarding how women become pregnant. Emotional confusion results and finally a pathological trend of thought is developed which, once started, runs rapidly to its inevitable conclusion—a false idea, a delusion.

It seems reasonably correct to conclude that this particular virginal delusion of being pregnant has its definite origin in a sense of uterine fullness due to the fibroid growth. Those stimuli which would have been normal from a pregnant uterus

became pathological when coming from a fibroid, and gave rise to a delusion—a false idea, when mixed with prudish sex ignorance and pseudo-moral religious repressions.

The second sequence has its origin in the fact that the virgin has a congenitally substandard ovary which never produces, and probably never has produced, a properly balanced internal secretion. She grew up to and through puberty with an incomplete or paranormal attitude toward life. Because of this faulty genetic *sine qua non*, this permanent endocrine unbalance, she approached the marriageable years greatly handicapped by faulty emotional and physical makeup. Repeated flirtatious association with the opposite sex created a pelvic congestion. Gradually a more or less chronic pelvic or uterine congestion was developed. When evidence of this uterine congestion began to arrive in the sensorium it was at once seized upon by the abnormal sex ideas already in existence, a train of thought was started which quickly developed into ideas of self-accusation and of fear. The sufferer's resistance to her pathological emotions was gradually lowered and the whole mental and emotional situation finally developed into a psychotic state or a psychosis, the central feature of which was a delusion of virginal pregnancy.

Here again it is possible and reasonable to conclude that the false idea of pregnancy in a woman who was undeniably a virgin had its primary origin in a bit of actual organic pathology—the chronic pelvic congestion originating in continued sex stimulation without satisfaction.

Examples equal in number to the total of all types of somatic delusions, hallucinations, obsessions and fancies, might be cited if time permitted and wisdom directed. They are not necessary. Sensory evidences coming from the organs and tissues of the body are the ultimate source of human mental activity. This theory, if accepted, will provide a means by which functional symptomatology may be analyzed and understood, and finally be traced to its ultimate origin.

SUMMARY

A final restatement of the theory follows: Human intellectual *function* originates from the inherent ability of body cells to communicate a sense of their own physiological condition to each other. Human intellectual *activity* results from the concentration of all these cellular communications in the sensorium where they are brought into contact with memories, both racial and acquired.

Healthy human thinking ability is the result of stimuli arising from normally functioning body cells, plus the moulding and elaborating activities of a normal sensorium, in the presence of a well-balanced store of racial and acquired memories.

Pathological human thinking develops when one or more important cell masses or organs in the body send unnatural stimuli to the sensorium. The quality of the resulting mental symptomatology depends in large measure on the type of physiological memories already stored up in the sensorium.

520 West Seventh Street.

DISCUSSION

NATHANIEL H. BRUSH, M. D. (103 East Micheltorena Street, Santa Barbara)—When Doctor Moore presented this paper before the Section of Neuropsychiatry at the fifty-sixth session of the California Medical Association he expressed the hope that the subject-matter of the paper would be productive of some general and special discussion dealing with the topics brought out.

Doctor Moore states that "thoughts and ideas concerning the outside world do not originate *de novo* inside us." But has not Doctor Moore here failed to take into account a great many of our thoughts and ideas which must originate within us? Analysis of many of our ideas concerning the outside world—broadly grouped as our instincts—will show that these thoughts can and do originate within us. The baby, to quote Doctor Moore's illustration, cannot think about pain or locate its origin. But the same baby will have little difficulty in locating and utilizing its mother's breast as a source of nourishment.

One gathers from this paper that Doctor Moore has been balked in his efforts to explain on a purely functional basis the symptoms presented by some of his patients, and has turned to an organic explanation. All well and good, but let the functional symptoms fall into their place, and let the organic fall into theirs. In the case of the virgin with delusions of pregnancy it is not entirely outside the realms of possibility that the delusions themselves expressed on the part of the virgin a wish fulfillment.

Doctor Moore also states that "pathological human thinking develops when one or more important cell masses or organs in the body send unnatural stimuli to the sensorium." If such is the case what organs or cell masses are we going to consider at fault when a schizophrenic tells us that his mind is being controlled by radio waves sent to him from a distance.

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EVA CHARLOTTE REID, M. D. (135 Stockton Street, San Francisco)—When Doctor Moore raises the question of the seat of intellection and ideation and the processes involved in their production he propounds a problem that has so far baffled all physiologists, psychologists, and neurologists. In the normal individual the sensorium is stimulated by sensations from the environment conveyed by vision, audition and olfactory, gustatory and cutaneous sensations, as well as by sensations from all the organs and parts of the body. In disease any or all of these may become pathological. In certain psychoses the individual may become completely indifferent to external stimuli and in the psychoneurosis one or more of these stimuli may be cut off or become pathological by an apparently purely psychological process.

In regard to the genesis of the psychoneurosis we know that stimulation from the environment produces through the autonomic nervous system definite organic changes which are independent of the will. Muscles stiffen in anger, retract and tremble in fear. Shame and embarrassment cause blushing. The sight and smell of food stimulates salivary and gastric secretion. Fear, anger and joy influence digestion, respiration and circulation. The researches of Crile, Sherrington, and others have shown that the emotions have a definite influence on the quality and quantity of the secretions of the ductless glands. It is therefore reasonable to suppose that an emotion existing over a long period of time may produce an abnormal condition of an organ or group of organs. The autonomic nervous system controls not only the ductless glands, but the organs which perform the functions of assimilation, conservation, destruction, and expenditure of energy and elimination of waste products. The theory of the psychoanalyst is that a functional derangement is caused by a repressed desire, fear or

anxiety, and even after the desire has been forgotten and the fear and anxiety dissipated, the disability is continued by the action of the autonomic system. Recent investigations have shown that many cases which had been diagnosed as suffering from globus hystericus have a spasmodic nervous contraction of the esophagus which interferes with deglutition.

In schizophrenia, or dementia precox, the theory of organ inferiority appears to fit the case as well as any other. The individual, having failed to develop a normal personality and being unable to meet the demands of adult life, creates a world of his own with hallucinatory and delusional experiences representing in symbolic form his wish fulfillments. As time goes on the dissociation becomes greater until he loses contact with his environment entirely as seen in the catatonic stupor. He regresses to a lower and easier level of existence, in some cases to the infantile state.

The depressions occurring in the involutional period present such a uniform picture of faulty metabolism and incomplete elimination one cannot doubt that there is an organic basis for the depressive somatic delusions which exist. Much research will have to be done before anything definite can be said on the subject.

In the psychoses associated with organic brain disease such as general paralysis of the insane, and arteriosclerotic conditions, the hallucinations and delusions are the result of degeneration of brain tissue and their character undoubtedly depends upon the location of the area involved.

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DOCTOR MOORE (closing)—This has been a very interesting paper to write. It was a difficult paper to write—difficult in that the idea to be expressed lies far back of our usual groove of medical thought.

Evidently I did not succeed very well in putting my idea into words, because the discussions of the paper, both those above quoted and those not reported, quite fail to expound the real matter. For example, Doctor Brush indicates that I "fail to take into account . . . our instincts."

On the contrary, one phase of my effort is directed toward finding the ultimate reason for our instincts. Far from not taking them into account, I rather accept them as things the origins of which are to be studied. According to the theory which this paper tries to make manifest, the instincts of all living things are the inherited results of ancestral experiences. These inherited results are real things and therefore must reside somewhere—in the brain, in the brain plus this or that organ or in the ultimate cellular makeup of brain, organ or complete soma. Possibly instincts are so complex that their ultimate seat is to be found in the total personality of the individual.

It seems easy to me to suppose that thought in all its phases is cellular in origin, and that the cells of origin of a particular type or quality of thought are the cells of the body which are particularly involved in the content of that thought.

Abortion Legalized—Russia, unafraid of experiment in government, has formed a commission for considering petitions of women who, for any cause, desire abortion. Eighty-three per centum of these petitions have received favorable action. In three years 55,320 authorized abortions have been done. In this great number there was no fatality. The operations are all free and are done in government hospitals. Within the same period the authorities of Russia learned of 66,786 abortions done by bunglers with 3000 deaths.

Not satisfied with the results of its trial of free abortions, Russia is now more actively teaching birth control and is experimenting with new methods of prevention. In all European countries there is increasing activity in teaching birth control. The United States is alone in forbidding the use of the mail to writings favorable to contraceptive methods. We, in a land of the free, practice the principle that the government must decide what the people may be permitted to know.—*Colorado Medicine.*

THE CLINICAL SIGNIFICANCE OF PULPLESS TEETH *

By J. MARK LACEY, M. D.
AND
CLAYTON R. JOHNSON, M. D.
Los Angeles

DISCUSSION *by E. F. Tholen, M. D., Los Angeles; Andrew B. Wessels, M. D., San Diego; Lloyd Bryan, M. D., San Francisco.*

IT is assumed that there is such a factor in the production of physical disability as focal infection, and that the teeth must always be suspected as a possible source. The object of this paper is to report from our personal clinical experience, the conditions under which we believe teeth should be condemned, and the results which were obtained by the procedures adopted.

BACTERIOLOGIC EVIDENCE OF INFECTION

In 1924 Dr. Russell Haden [1] of the University of Kansas Medical School reported an extensive study concerning the bacteriologic findings of pulpless teeth as compared with evidence of infection as commonly interpreted on the radiograph. His conclusions were summarized as follows:

"The incidence of infection is almost as high in the radiographic negative group as in the radiographic positive group. There is a very sharp limitation to the translation of radiographic evidence of infection into terms of bacteria.

"In many cases the radiographic negative tooth is a far greater source of systemic infection than the radiographic positive tooth, since in the former there may be little resistance to infection."

CLINICAL RECOGNITION OF INFECTED TEETH

Previous to the publication of these conclusions only the radiographic positive teeth were considered by us as active foci of infection. Such evidence, as commonly interpreted, is characterized either by absorption of, or by increased density of the periapical tissue. Pulpless teeth which did not show evidence of periapical changes on the radiograph were not sacrificed.

In our own practice the results of this procedure were only partially satisfactory. We could come to no definite conclusion clinically as to what part pulpless teeth actually did play in the production of physical disability. During the past two years our procedure has been to suspect all pulpless teeth regardless of the periapical changes on the radiograph, as well as all teeth showing extensive marginal absorption of the alveolar process.

In carrying out this procedure it was necessary to secure the absolute cooperation of a competent dentist who held similar views. Radiographs were indispensable. The majority of pulpless teeth had root canal fillings, which gave positive shadows on the radiographs. Marginal absorption was also readily demonstrated. Teeth with large fillings or crowns were considered as suspicious and were referred to the dentist for vitality tests. The gin-

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* Read before the Innominate Society of Los Angeles, March 9, 1927.

gival margins were also closely examined for evidence of infection.

COMMENTS ON FIFTY SELECTED CASES

From our records we have selected fifty cases with complete records. All of these patients have been studied in detail, and they have been selected because of the presence of pulpless teeth, pyorrhea, or both, were the only positive physical signs or evidence of an exciting factor in the production of the disability. For presentation, these cases have been classified into the following groups, according to their cardinal symptoms:

1. *Neuralgia*—Usually characterized by recurring headaches, pain in the back of the head and neck, shifting pains in the muscles and joints, a generalized feeling of ill health, and, in a number of cases, a genuine sciatica.

Of this type there were twelve cases, eleven of which were completely relieved of all symptoms, and one definitely improved.

Typical Case—Male, age 31. Two months previous to consultation developed numbness, accompanied by pain and tenderness over the outer and posterior part of the left thigh. These symptoms subsided after about four weeks and recurred again about two weeks later. There was considerable pain in the back of the head and neck, he was very nervous, had lost considerable weight, and complained of a general feeling of ill health. The general physical and laboratory examinations were negative. Radiographic examination of the teeth revealed three that were pulpless.

Treatment: The three pulpless teeth were extracted. Symptoms were exaggerated for a time. Following this there was a gradual improvement with relief from all distressing symptoms, and there had been no recurrence nine months later.

2. *Neurasthenia*—Usually characterized by a state of nervous and mental exhaustion, headache, insomnia, loss of appetite and weight, indigestion, and at times, circulatory disturbance.

In this group there were fourteen cases, eight of which were relieved of all symptoms, and six definitely improved.

Typical Case—Female, age 29. Complained of nervousness, inability to eat, weakness, insomnia, frequent colds, constipation and abdominal distress.

Physical examination: Weight, 100 pounds, or about twenty pounds below average; pulse, 118; blood pressure, 100; teeth in poor condition. The remainder of the physical and laboratory examination was negative. Fluoroscopic examination of the gastro-intestinal tract showed a high degree of gastro-enteroptosis combined with a general sluggishness of motility. Radiographic examination of the teeth revealed four that were pulpless.

Treatment: The four pulpless teeth were extracted and the patient was put to bed on a high caloric diet. Within six weeks she had gained twelve pounds in weight and was completely relieved of all distressing symptoms.

3. *Gastro-Intestinal Distress*—Usually characterized by heartburn, gas on the stomach and bowels, distress without direct relation to type of food or time of taking food, and rarely with demonstrable localized abdominal tenderness. The symptoms were so distressing in all of these cases as to warrant a complete x-ray study of the gastro-intestinal tract.

In this group there were ten cases, all completely relieved.

Typical Case—Male, age 25. Had complained of stomach trouble for six months, characterized by distention of the abdomen with gas, accompanied by acute distress. The distress came on at any time of the day or night, regardless of meals or type of food. He had never noticed any soreness in the abdomen. Bowels were somewhat costive. The remainder of the physical and laboratory examination and the gastro-intestinal x-ray examinations were negative. Radiographic examination of the teeth showed the lower left second molar pulpless.

Treatment: The pulpless tooth was extracted, and dietary management of the constipation was advised. One week later the distressing symptoms had all disappeared and have not recurred six months later.

4. *Hypertension Accompanied by Headaches, Dizziness, Weakness, and Variable Gastro-Intestinal Symptoms*—Of this type there were six cases, all definitely improved.

Typical Case—Female, age 55. Complained of headaches, dimness of vision, weakness, palpitation, and gastro-intestinal distress.

Physical examination: Blood pressure, 275-140. Otherwise negative. Laboratory examination negative. Fluoroscopic examination of the heart with orthodiagraphic tracing showed a hypertension silhouette with all diameters of the heart increased.

Radiographic examination of the teeth showed three pulpless and advanced generalized absorption of the alveolar margins.

Treatment: All of the teeth were removed. The patient was placed on a low protein diet and potassium iodid.

Within three days the blood pressure had dropped to 210-130, and had remained so several months later. The distressing symptoms all promptly disappeared.

5. *Low Back Pain*—Three cases all completely relieved.

Typical Case—Male, age 60. Complained of lumbar pain for about two months. There was no history of previous injury. The pain was greatly exaggerated on arising from a sitting position. No other complaint.

The general physical examination and laboratory examination was negative excepting for advanced pyorrhea about all of the teeth.

Treatment: All the teeth were extracted, which resulted in complete recovery.

Besides the above cases there were two with a very definite toxic erythema and two with acute exacerbation of a chronic arthritis. The toxic erythema with the accompanying symptoms was entirely relieved, also acute symptoms of the arthritis.

CONCLUSIONS

1. Radiographic examination of all the teeth and edentulous areas, combined with the clinical examination by a competent cooperative dentist, is essential in searching out foci of infection about the teeth.

2. In the interpretation of radiographic evidence of infection all pulpless teeth and all teeth showing extensive absorption of the alveolar margins must be considered as active sources of infection.

3. Judging from clinical results obtained in our own cases, it is our contention that the removal of all pulpless teeth and of all teeth showing exten-

sive infection of the gingiva and alveolar margins, is entirely warranted, as prophylactic, as palliative and as curative measures.

1052 West Sixth Street.

REFERENCES

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DISCUSSION

E. F. THOLEN, M. D. (1136 West Sixth Street, Los Angeles)—Doctors Lacey and Johnson have shown a comprehension of the pathology of the mouth not often fully understood by the general practitioner of medicine. The study of their paper will prove helpful to both the physician and dentist. I agree in the main with all that has been said in the paper, but my results from the removal of foci of infection have not always been as successful as I had hoped they would be. There are failures following the extraction of teeth, especially in such conditions as neuralgia, arterial hypertension, chronic nephritis, neurasthenia, and diabetes. I cannot agree with the conclusion that we are warranted in removing pulpless teeth as a prophylactic measure. I believe that pulpless teeth, the roots of which show a live peridental membrane about the apex and a root canal that can be filled, should be treated, filled and retained, providing the patient is not suffering from any systemic disease that could be influenced by a focal infection.

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ANDREW B. WESSELS, M. D. (1305 Medico-Dental Building, San Diego)—The mouth and jaws have the natural protection of a very rich blood supply. It is logical that an infection which could become established in the teeth would have considerable invasive power and readily metastasize; thus establishing a secondary infection in a field of lesser vascularity and greater susceptibility, according to the inherent susceptibility or immunity of the patient. The attention of the profession has frequently been called by men devoting their time to research in this field that the radiogram cannot indicate the amount of virulence of the infection nor the degree of susceptibility to the infection; and that some devitalized teeth showing little or no periapical involvement are frequently the greatest offenders. If Doctors Lacey and Johnson are mistaken in their conclusions that all pulpless teeth and all teeth showing extensive infection of the gingivae and alveolar margins should be removed, it is a mistake favoring the side of the physical factor of safety and may offset the occasional unnecessary loss of a useful unit of mastication which loss may be avoided by investigating other possible foci. However, I do not agree with Doctors Lacey and Johnson in such a conclusion, and I do know that many cases showing extensive marginal destruction can be successfully operated unless there is an involvement of the bone between the bifurcations of the multirooted teeth. I do not believe that in the absence of systemic involvement that all pulpless teeth should be removed as a prophylactic measure. However, it is well to bear in mind that while dental infection may have been the primary etiological focus, an established secondary infection may not clear up even though the primary focus is removed. I believe that intelligent treatment must come through careful investigation of each individual case and that the cooperation of a competent dentist is invaluable.

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LLOYD BRYAN, M. D. (135 Stockton Street, San Francisco)—The authors' assumption that the incidence of infection in pulpless teeth is almost as high in the radiographic negative group as in the radiographic positive group is not confirmed; but the clinical experience of our best dental surgeons and bacteriological confirmation certainly cannot be accepted without question on account of the almost impossible task, at least under present conditions, of obtaining uncontaminated culture from an extracted tooth.

The principal if not only function of the pulp is to form dentine. Is it fair to assume that a tooth with this dentine forming substance removed and replaced under aseptic condition is dead and infected when the vital peridental membrane is intact? Most dental surgeons do not hesitate to remove a pulp when it has passed its useful period and the restoration of a satisfactory denture requires it. In the hands of competent dentists many of the frankly infected teeth can be restored to normal clinical and radiological appearance. The teeth have a double formative and nutrient supply in the pulp and peridental membrane, and this latter membrane continues its supporting and protective function after the pulp has been removed. Many authorities believe that pyorrhea is the result rather than the cause of a general systemic condition.

The wholesale removal of pulpless teeth and the substitution many times of inefficient uncomfortable appliances may cause havoc with the nervous system or general body health. There are many healthy patients with extremely bad mouth hygiene and infected teeth and many a case of arthritis with perfectly healthy teeth.

In practically all the authors' examples the patients were subjected to other recognized forms of treatment besides removing the pulpless teeth. One wonders if rest and iodids would not have alone reduced the blood pressure in one example; and if rest, diet and relief of constipation in another might not have relieved the so-called "neurasthenic." In face of a general body disturbance the removal of pulpless teeth that are clinically and radiologically normal may at times be of benefit, but it also has potentialities of a great deal of harm. Let us be sure that there is not some other hidden source of infection.

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AUTHORS (closing)—We have presented our conclusions based upon our clinical experience. Without further discussion we refer you to the observations and conclusions recently set forth by the department of dentistry of the Mayo Clinic under the direction of Doctor Gardner. Their evidence is far more convincing than we, with our limited facilities, could ever hope to demonstrate.

DIETETIC CONSIDERATIONS IN THE TREATMENT OF OBESITY*

By FRED S. MODERN, M. D.
AND
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Arrowhead Springs

DISCUSSION *by Ernest S. du Bray, M. D., San Francisco; Esther B. Clark, M. D., Palo Alto; William M. Happ, M. D., Los Angeles.*

THE following considerations are based partly on a study of the literature of the subject, partly on experimental and clinical experience. The leading idea of the relative etiological importance of mineral and water metabolism in obesity has been widely discussed, and well summarized in the recent edition of Eugene DuBois' "Basal Metabolism in Health and Disease."[1] The practical application of these facts was on the point of being recognized when I took up the consideration of the matter. I will restrict myself as much as possible in the following discussion to fundamentals in the treatment of obesity, since the sub-

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* From the Arrowhead Springs Metabolic Clinic, Arrowhead Springs.
* Read before the Los Angeles County Medical Society, October 20, 1927.

ject is too large to permit even a sketchy presentation of the principles involved, especially in regard to the pathological varieties of obesity.

The problem of obesity is strictly a nutritional problem, regardless of the etiology.[2] Whether it is due to overfeeding or to certain disturbances of metabolism, the basic fact undoubtedly is that the intake exceeds the utilized amount of food. This conception would reduce the treatment of obesity to a simple dietetic procedure, that of undernutrition. But all of those who have had experience in the treatment of obesity recall certain cases in which, in spite of the utmost caloric restriction compatible with the patient's well-being, the scales showed disappointing results: not only did the patient not lose weight, but very often actually showed a certain amount of gain.

To the patient as well as to the physician the actual result, that is the reduction of weight, is the only important feature of the treatment. We know well that the caloric intake, say of 800 calories, is insufficient to meet even the basal requirement, and undoubtedly patients on 800 calories have burned up some of their fat deposits. Consequently this added weight must be due to other factors than newly built body tissue.

To elucidate the origin of this gain I performed a number of water-balance tests in obese patients to ascertain whether this gain in weight might be attributable to a possible water retention. The method adopted was the ordinary water test as prescribed by Volhart for functional renal tests. The patient drinks at 7 a. m., 1500 cc. of water: he does not receive any fluid within the next twenty-four hours. For breakfast he receives 45 grams of protein and 4 grams of salt at 7:30 a. m., and is served a dry luncheon and dry dinner, protein and salt-free. The urine is collected at hourly intervals beginning at 8 a. m. for the first four hours; subsequently at two-hourly intervals until 8 p. m., and the night urine from 8 p. m. until 7 a. m. is collected in bulk. The patients were kept under basal conditions throughout the test period. They were confined to bed and sufficient covers were permitted to keep the patient comfortably warm but not enough to produce perspiration. Tests were discarded if a patient perspired slightly over one hour, or perspired profusely at any time. Under these conditions patients with a normal water balance eliminate the entire water, in excess of what has been taken at the start of the test, within four hours, and excrete all the salt that they received within twenty-four hours.

Volhart Test

Protein 45 grams; NaCl. 4 grams; H_2O 1500 cc.
January 22, 1924.

Time	Vol.	Sp. Gr.	% NaCl.	Total NaCl.	T. N.
7– 8	106	1005	0.094	0.10	0.37
8– 9	457	1002	0.080	0.22	0.74
9–10	589	1001	0.073	0.43	0.72
10–11	380	1002	0.15	0.57	0.73
11–12	185	1006	0.25	0.44	0.65
12– 2	145	1012	0.25	0.36	0.78
2– 4	88	1020	0.83	0.73	0.64
4– 6	43	1036	0.96	0.42	0.86
6– 8	58	1032	0.96	0.57	1.13
8– 7	207	1029	0.46	0.98	3.52
Total	2257			4.82	10.34

The results of the tests were uniform in all obese cases. Instead of an output in excess of 1500 cc. in the first four hours they had a water retention of from 30 to 60 per cent: some of the patients showed a positive water balance of from 10 to 30 per cent within the next twenty-four hours.

I am inserting a typical test chart:

Volhart Test

Protein 45 grams; NaCl. 4 grams; H_2O 1500 cc.
Name—No. 1745 March 21, 1924.

Time	Vol.	Sp. Gr.	% NaCl.	Total NaCl.	T. N.	Acid	Urea
7– 8	95	1002	.086	.08	.47	12.9	.66
8– 9	475	1003	.024	.13	.60	14.2	1.30
9–10	332	1004	.029	.10	.47	8.0	.92
10–11	67	1020	.330	.22	.55	5.3	.92
11–12	28	1029	.721	.20	.41	2.5	.42
12– 2	42	1022	.746	.32	.72	28.0	1.05
2– 4	17	1034	.601	.10	.33	7.1	.47
4– 6	65	1032	.622	.41	1.16	40.25	1.12
6– 8	16	1038	.552	.09	.37	15.3	.35
8– 7	170	1030	.305	.52	3.38	64.0	2.72
Total	1307			2.17	8.44	198.4	9.93

These results have been secured after thorough examination of the kidneys, occult edema being excluded. This water retention is well known—even to makers of anti-obesity patent medicines. One of the large pharmaceutical firms includes the following instructions in the pamphlet accompanying its "Anti-Obesity Tablets": "While the patient is under treatment, he must abstain from starches and fats, and should drink very little water."

This water retention can be met in two ways: either by restriction of the water intake as advocated by the above-mentioned patent medicine makers, or by modifying the diet so as to reduce the water avidity of the tissues to a minimum.

In this connection I wish to mention that German authors have used, with more or less success in obesity, the new, powerful diuretic, "Novasurol," a mercury derivative for dehydration of the patient.[3] The same means can be attained in a more agreeable way by the electric light cabinet or similar sweating procedures.

A water restriction seems undesirable, since the chemical examination of the blood and urine of patients on the low calorie diets show invariably the presence of a certain amount of acetone, simply due to a carbohydrate privation acidosis. I had occasion to examine the CO_2 combining power of the plasma in a number of these cases, and found in one instance as low a value as thirty-three volume per cent. The usual value in these cases is subnormal. To meet this starvation acidosis by soda bicarbonate is unfeasible, because it tends to create edema, in other words promotes water retention.

Patients on an unselected low diet are usually feeling weak, tired and exhausted. This is due to their low diet as well as their acidosis. Their energy requirement is amply covered by the utilization of their own fat deposits; it is the ensuing acidosis rather than the starvation that causes the above-mentioned untoward symptoms.

Since the alkalis cannot be used to combat acidosis, on account of their water binding power, and the use of insulin is inadvisable because of

Five Hundred Calory Diet

Diagnosis	NaCl.	Protein	Fat	Carbohydrate	Calories
Obesity	0	50	11	50	500
Breakfast	**Grams**	**Protein**	**Fat**	**C. H.**	**Calories**
Grapefruit	100	1	0	5	148
Eggs	1	7	6	0	
Oatmeal Muffins	1	3	2	3	
Lunch					166
Tomato Salad	100	1	0	3	
Mayonnaise	Mineral Oil				
String Beans	100	2	0	5	
Asparagus	100	1	0	3	
Cottage cheese	45	9	0	2	
Oatmeal muffins	1	3	2	3	
Strawberries	60	1	0	4	
Dinner					185
Broiled chicken	110	18	1	0	
Summer squash	100	1	0	3	
Carrots	90	1	0	8	
Lettuce salad	66	1	0	2	
Mayonnaise	Mineral Oil				
Sliced peaches	100	1	0	9	
Total		50	11	50	499

Vitamins:

* Indicates good source.
** Indicates excellent source.
Incomplete data available on vitamins D and E.

A	B	C	D	E
Egg Yolk**	Grapefruit**	Grapefruit**	Egg Yolk	Lettuce
Carrots**	Tomato*	Tomato*		
Lettuce*	Lettuce*	Lettuce**		
Tomato*	Carrots*	Carrots*		
String beans*	String beans*	Peach*		

Mineral Salts:

Ca	Mg	K	Na	P	Cl	S	Fe	NaCl.
0.735	0.173	2.343	0.676	0.911	0.748	0.685	0.0292	0.722

possible hypoglycemic reactions, it is necessary to carry off as much as possible of these metabolites by abundant diuresis and high water intake. To avoid the retention of water it is necessary to lower the intake of certain minerals. A mineral deficiency in the diet, in the first place that of sodium chlorid, alters the water binding powers of the tissues in such a way that water retention will not occur. In a recent issue of the *Klinische Wochenschrift*, Starkenstein [4] proved this point experimentally. Functional water tests which I have done on obese patients on a salt-free regimen show that when this precaution is carried out the water balance becomes negative, and the four-hourly output is in excess of the test intake.

The regimen which we are following as a routine in uncomplicated cases of obesity consists, as closely as possible, of an adequate protein intake, since protein restriction in the treatment of obesity—in addition to the acidosis—produces a notable weakness. We also maintain as high a carbohydrate intake as possible, within the caloric limits, in order to reduce the acidosis to a minimum. We restrict the patient's salt intake to a maximum of 2 grams daily. If the patient fails to show a satisfactory loss in body weight the salt is promptly withdrawn altogether. The usual response is a considerable increase in the diuresis, as well as a notable diminution of the patient's thirst.

The diets, in addition that they must meet the patient's protein requirement and obviate a carbohydrate privation acidosis, must contain the necessary vitamins and, if feasible, should contain calcium and phosphates in adequate quantity, a point that is frequently overlooked in reducing dietaries.

Such a regimen, however, can never be carried out in the patient's home. Institutional treatment is absolutely necessary, and only then of avail if a skilled dietitian, experienced in the handling of metabolic patients, is available.

Fillers, like agar-agar and similar substances, must be used to give sufficient bulk to insure regular bowel movements, since not only the low amount of ingested food, but especially a salt-free diet, is notoriously constipating.

Constipation, in connection with the acidosis, may be a seriously disturbing factor. Headache, malaise, nausea, vomiting, and an increasing feeling of weakness, are often the consequences of unskilled management of reducing dietaries. But if the above-mentioned precautions are taken, these symptoms are rarely of importance. The softness and lubrication of the feces will be in-

Six Hundred Calory Diet

Diagnosis	NaCl.	Protein	Fat	Carbohydrate	Calories
Obesity	0	60	13	60	600
Breakfast	**Grams**	**Protein**	**Fat**	**C. H.**	**Calories**
Cantaloupe	100	1	0	10	168
Eggs	1	7	6	0	
Oatmeal muffins	1	3	2	3	
Lunch					223
Cucumber salad	66	1	0	2	
Oatmeal muffin	1	3	2	3	
Cauliflower	100	1	0	4	
Zucchini	100	1	0	3	
Cottage cheese	100	21	1	4	
Strawberries	70	1	0	5	
Mayonnaise	Mineral Oil				
Dinner					206
Lettuce salad	66	1	0	2	
Mayonnaise	Mineral Oil				
Asparagus	100	1	0	3	
Carrots	100	1	0	9	
Tomato	100	1	0	3	
Smelt	90	16	2	0	
Apricots	70	1	0	9	
Total		60	13	60	597

Vitamins:

* Indicates good source.
** Indicates excellent source.
Incomplete data available on vitamins D and E.

A	B	C	D	E
Egg yolk**	Cantaloupe*	Lettuce**	Egg yolk	Lettuce
Carrots**	Carrots*	Tomato**		
Cantaloupe*	Tomato*	Carrots*		
Tomato*	Cauliflower*			
Lettuce*	Lettuce*			

Mineral Salts:

Ca	Mg	K	Na	P	Cl	S	Fe	NaCl.
1.134	0.192	2.490	1.193	1.320	1.331	0.878	0.0098	0.870

sured by the use of mineral oil, which is served in mayonnaise.

I wish to say a word or two about the Spa treatment of obesity, which has a wide reputation. The success is commonly ascribed to the healing "waters" of that particular spring. The explanations of the result are, however, a shameful record of medical commercialism and superstition. As a matter of fact, the famous Carlsbad treatment of obesity consists of eating little, much exercise, the induction of sweating, and the ingestion of huge amounts of hypertonic solutions, which lead to a rapid dehydration of the body. Essentially these measures are correct. The waters are alkaline, and therefore possibly useful in neutralizing some of the acid waste products previously mentioned. The misleading of the patient by unduly laboring unessential details and the careful suppression of relevant ones is reprehensible.

For the patient whose basal metabolism is below normal, the administration of thyroid extract in sufficient doses to raise the value to normal is indicated. I must add that thyroid medication in uncomplicated cases of obesity, for reasons mentioned above, constitutes an abuse of sound therapeutics. Strouse et al.[5] have shown that a hypothyroid origin obtains in only a small percentage of obesity patients—in our experience only about 15 per cent of the cases show a basal metabolism value below 10 per cent. Very often thyroid medication, even in hypothyroid cases, will produce little or no practical results. In these cases we follow Schmidt and Lorant's[6] method of sensitizing the patient with foreign protein injections, usually milk, beginning with 1 to 3 cc. and increasing the dose every few days until a reaction is obtained.

To what lengths in this connection some authors may go is shown by a recent article of Rachel Hirsch,[7] wherein she advocates the non-dietary treatment of obesity, and relies solely on thyroid medication and foreign protein injections in unselected cases. Thyrotoxic reactions very often follow such rash methods of treatment, which may be described as sheer fanaticism.

I will touch here only lightly on the other phases of obesity. They are partly too well known, partly too obscure to merit a thorough discussion. I will only mention postpartum obesity, that associated with deficiency of the posterior lobe of the pituitary gland, and postclimacteric obesity. The type in these cases is often mixed—the etiology may be partly overfeeding, partly a concomitant

Eight Hundred Calory Diet

Diagnosis	NaCl.	Protein	Fat	Carbohydrate	Calories
Obesity	2	60	13	111	800
Breakfast	**Grams**	**Protein**	**Fat**	**C. H.**	**Calories**
Orange	100	1	0	10	182
Eggs	1	7	6	0	
Toast	20	2	0	12	
Lunch					289
Cabbage Salad	50	1	0	3	
Mayonnaise	Mineral Oil				
Carrots	100	1	0	9	
Cauliflower	100	1	0	4	
Cottage cheese	80	17	1	3	
Baked apple	100	1	0	20	
Bread	15	2	0	8	
Dinner					326
Lettuce salad	66	1	0	2	
Mayonnaise	Mineral Oil				
String beans	100	2	0	5	
Hubbard squash	90	1	0	8	
Veal cutlet	80	19	6	0	
Figs	100	1	0	19	
Bread	15	2	0	8	
Total		60	13	111	797

Vitamins:

* Indicates good source.
** Indicates excellent source.
Incomplete data available on vitamins D and E.

A	B	C	D	E
Egg yolk**	Orange*	Orange**	Egg yolk	Lettuce
Carrots**	Cabbage*	Cabbage**		
Lettuce*	Carrots*	Lettuce**		
String beans*	Cauliflower**	Carrots*		
Squash*	Lettuce*	Apple*		
	String beans*			

Mineral Salts:

Ca	Mg	K	Na	P	Cl	S	Fe	NaCl.
1.204	0.199	2.516	1.092	1.149	1.328	0.786	0.0102	0.756

hypothyroidism (especially notable in the postclimacteric obesity).

In pituitary and postclimacteric cases, gland injections are sometimes of a certain limited value, with or without thyroid. Thyroid medication should be, in these as in any other cases of obesity, restricted to those with a true thyroid deficiency, as proved by a lowered basal metabolism.

In closing I wish to emphasize again that obese patients as a rule retain water under normal conditions, and even more so when on an undernutrition diet. This water retention can be met by a limitation of the mineral intake, notably that of sodium chlorid. The other difficulty in the treatment of obesity—acidosis—must be met by an adequate carbohydrate supply, and the protein, vitamin, calcium, phosphate and iron intake must be kept up to maintenance level at least.

Drugs and gland products are only indicated in certain selected cases of known etiology.

Arrowhead Springs.

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DISCUSSION

ERNEST S. DU BRAY, M. D. (870 Market Street, San Francisco)—There are numerous observers who will not agree with one of the preliminary statements of the authors, namely, "that the problem of obesity is strictly a nutritional one, regardless of the etiology." The underlying causes of obesity remain obscure. However, we do see both exogenous and endogenous types and, further, the important mixed type in which both chemical and endocrine factors are at work.

The idea of restricting salt and water in the treatment of obesity is not new, but has been advocated especially by continental clinicians for some years. These measures must be supplemented with a reduction in the total diet and a limitation of the fat content. In my own work I usually allow most patients a total diet of 1200 calories per twenty-four hours, of which the fat does not exceed 75 grams, and the rest is made up of protein and carbohydrate. It is true that some patients fail to lose weight on such a diet and further restrictions are necessary.

In the presence of vascular hypertension associated with overweight a salt-poor diet is often useful both

Twelve Hundred Calory Diet

Diagnosis	NaCl.	Protein	Fat	Carbohydrate	Calories
Obesity	2	70	20	185	1200
Breakfast	**Grams**	**Protein**	**Fat**	**C. H.**	**Calories**
Prunes	100	1	0	20	412
Orange juice	100	0	0	12	
Eggs	2	14	12	0	
Toast	40	5	0	24	
Lunch					386
Grated carrot salad	66	1	0	6	
Mayonnaise	Mineral Oil				
Brussels sprouts	100	1	0	3	
Corn	100	3	1	20	
Codfish	90	17	1	0	
Grapes	100	1	0	20	
Bread	30	3	0	17	
Dinner					402
Tomato-lettuce salad	100	1	0	3	
String beans	100	2	0	5	
Turnips	100	1	0	7	
Baked potato	100	2	0	18	
Roast chicken	50	14	6	0	
Raspberries	100	1	0	13	
Bread	30	3	0	17	
Total		70	20	185	1200

Vitamins:

* Indicates good source.
** Indicates excellent source.
Incomplete data available on vitamins D and E.

A	B	C	D	E
Egg yolk**	Orange*	Orange**	Egg yolk	Lettuce
Carrots**	Prunes*	Tomato**		
Tomatoes*	Corn*	Raspberries**		
String beans*	Carrots*	Lettuce**		
Prunes*	Tomato*			
Lettuce*	String bean*			
	Turnips*			
	Potato*			
	Lettuce*			

Mineral Salts:

Ca	Mg	K	Na	P	Cl	S	Fe	NaCl.
0.446	0.297	3.486	0.860	1.049	1.080	1.103	0.0152	0.860

in relieving the disagreeable symptoms due to vascular disturbance and also in reducing the body weight. I have not used limitation of fluid intake in the treatment of uncomplicated obesity. It may be a valuable measure to adopt when combined with salt-poor diets as the present authors advocate. The place of thyroid feeding in the management of certain types of obesity is well established.

It is, of course, ideal to have patients undergoing reduction regimens in hospitals or institutions where all factors can be readily controlled. We all realize that it is only a small proportion of patients who are willing and able to spend the time and money necessary for such hospitalization. Consequently methods elaborate and complicated are not practical for the average patient. I find a little time spent in the beginning, instructing the patient with reference to food values and the preparation of quantitative diets, is the most effective therapeutic measure available.

Until comparatively recently obesity has received scant attention by the medical profession. With the increasing knowledge of its importance as a precursor of diabetes, cardiorenal-vascular diseases and the arthropathies, strenuous efforts are now being made to salvage this condition from the hands of the quacks and faddists who have long recognized it as an important source of revenue.

The cooperation of the obese patient can usually be obtained if the physician in charge can offer a definite program constructed on rational and positive dietetic and physiotherapeutic lines. About all avoid too rapid reduction of the obese because this is attended with certain real dangers.

ESTHER B. CLARK, M. D. (300 Hamilton Avenue, Palo Alto)—The authors are quite right in their primary statement that obesity is primarily a nutritional disturbance, *i. e.*, a caloric intake which exceeds the caloric output. The factors causing the nutritional disturbance may be any of several, anything in fact that decreases the energy expenditure or alters the normal appetite regulatory mechanism so that the caloric intake will be excessive.

The study here presented on the water retention in obese individuals is a distinct contribution, and does much to explain the failure of many obese individuals to lose on a low caloric diet, at least for some time. The treatment with a low salt diet combined with a low caloric intake is entirely logical.

It is rather difficult to conceive of patients failing to lose weight if they are kept on a diet well below their caloric expenditure over a sufficiently long period. There must be a point beyond which there is no longer a water retention, and then weight loss occurs. The tissue metabolism must continue independently of the water and salt metabolism. We have never seen a

water retention sufficient to result in a demonstrable edema in an obese individual (with normal renal and cardiac function) who was on a reducing regimen.

*

WILLIAM M. HAPP, M. D. (523 West Sixth Street, Los Angeles)—It is a pleasure to read a paper on the treatment of obesity in which the endocrine glands are relegated to a minor rôle, and the attention centered on the diet as the factor par excellence in weight production and reduction. There is undoubtedly some factor responsible for the fact that some individuals put on weight easily and others with difficulty. This tendency to "easy fattenability" is strikingly familial and can be observed in young babies. There are, however, no reliable data proving that the glands of internal secretion are primarily responsible for this condition. The peculiarity in metabolism of these patients makes it more difficult for them to lose weight than is the case with other individuals. It is interesting that only 15 per cent of Doctor Modern's patients showed basal metabolism of — 10 or less, indicating that hypothyroidism plays only a minor rôle in these cases.

The most interesting point advanced by the authors is the rôle of water metabolism in the obese and the importance of salt restriction in combating the water retention present in these patients. The tendency to water retention is probably only one expression of the metabolic peculiarity of the obese, and further studies in mineral metabolism should be of great importance.

The degree of acetone body acidosis which develops during the first few days on a low caloric diet is not, in our opinion, of any serious consequence unless the carbohydrate reduction be made too abruptly. In those patients who develop a ketosis readily, this can be corrected by increasing the carbohydrate intake with subsequent more gradual reduction. A sudden reduction from the patient's usual diet to an intake of 50 grams of carbohydrate (diet I) would almost certainly produce a degree of ketosis due to the sudden attack on the body fat. A gradual reduction in carbohydrate would obviate this.

The emphasis on an ample protein, mineral and vitamin content of the reduction diet is certainly well founded. The diets should be planned, as the authors have done, to prevent a deficiency in these elements. This is particularly important in children and adolescents where the factor of growth must be allowed for. The whole subject of weight reduction has been surrounded by a veil of mystery and secrecy, which has been fostered by quacks and promoters of patent cures. In putting this subject on a scientific plane the authors have rendered a real service.

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DOCTOR MODERN (closing)—It is true that continental physicians have advocated the restriction of the salt intake in obesity in the past few years, but as demonstrated in a recent paper by Franz Kisch of Marienbad, have never carried it to its logical conclusion. Probably owing to the fact that the problem of obesity was taken up most extensively by physicians practicing in Spas, the salt restriction was usually accompanied by the intake of highly mineralized waters which more than offset any possible benefit of the sodium chlorid restriction in the diet. Moreover, salt restriction means about 2 to 5 grams of NaCl according to continental conception. (See David, O., Treatment of Obesity, Med. Klin., 1925, xxi, 1751.) In connection with the salt-free diet, which lowers thirst considerably, it is necessary to advise the patient to drink a certain minimum amount of water with no upper limits for reasons already mentioned. We usually advise about from one and a half to two quarts a day.

The purpose of this paper is to call attention to the necessity of a scientific treatment of obesity. This can be done only by careful analysis of the individual case. The prevalent vogue of indiscriminate feeding of thyroid is as pernicious as the equally popular orange-juice fast. The former has its place only in those patients whose basal metabolism is definitely lowered, the latter disregards all principles of sound dietetics. The obese patient has been too long a victim of unscrupulous practitioners, medical and otherwise.

I fully agree with Doctor du Bray that the intelligent cooperation of the patient is absolutely necessary. At Arrowhead Springs the patient is taught daily by the dietitian how to calculate his diet and what are the principles underlying it. The patient himself has to make out his own menu toward the end of his stay, and, via palate and scales, he quickly learns to realize pitfalls and difficulties. I believe that a diet of 1200 calories with a fat intake in the neighborhood of 75 grams leaves too little leeway, either for an adequate protein or carbohydrate intake. Our 1200 calorie obesity diet contains never more than 30 grams of fat, so that the patient receives almost normal meals except for butter, fat meats, and rich desserts.

No originality is claimed for any of our contentions, but if this paper has succeeded in calling attention to some difficulties, certain principles and also abuses in the management of the obese patient, it has achieved its purpose.

THE TECHNIQUE OF LARYNGECTOMY*

By H. B. GRAHAM, M. D.
San Francisco

DISCUSSION *by I. W. Thorne, M. D., San Francisco; James F. Percy, M. D., Los Angeles; Simon Jesberg, M. D., Los Angeles.*

THIS paper will deal only with those favorable cases of intrinsic carcinoma of the larynx which have been discovered early and do not show the extensive gland or esophageal involvement which necessitates wide dissection.

It would be a boon to these patients if the general physician would call in a laryngologist as soon as a hoarseness became chronic, for it is only through early interference that any hope can be given to the poor sufferer from this dread disease. Those cases are most favorable which are limited by the cartilaginous box and which have not been interfered with before biopsy. Whether we elect x-ray, fulguration, radium or surgical intervention or a combination of some of these methods, they are always more successful if the case has not been irritated by ill-advised attempts with local applications.

PREOPERATIVE CARE

All patients will be immeasurably more comfortable after the operation if they have been properly studied and prepared beforehand. The teeth should be put in the best possible repair. The mouth is hard to sterilize and hard to keep clean during and immediately succeeding the operation and an attempt should be made to put it in good condition for a few days preceding the operation. Any of the accepted methods such as swabbing with acroflavin may be used. It is wise to avoid much interference with the pharynx during the operation, as the anesthesia may be much lighter by so doing, and the possibility of vomiting and soiling the wound lessened.

Before operation, the diet, blood pressure, urine, blood analysis, and general condition of the patient should be thoroughly studied and regu-

* Read before the Eye, Ear, Nose, and Throat Section of the California Medical Association, at the Fifty-Sixth Annual Session, April 25-28, 1927.

lated by a competent internist, who can also be of great aid in the postoperative period.

It is incumbent on the operator to see that the operating room is properly equipped with the special apparatus and personnel necessary for a smooth and rapid operation and that the assistants be told beforehand what is going to happen and how. The first half of the operation is done under local anesthesia, the last half may be under ether; a suction apparatus is used throughout. One assistant should manage the suction, one act as assistant to the operator, and another as anesthetist. These, together with two nurses, should make an efficient working crew. There is a disadvantage in a larger number.

THE OPERATION

The ether is to be given through a tube, which is to be inserted into the severed trachea and which should be provided with a stopper made by wrapping the rubber tube with gauze, thicker at the top than at the bottom. The anesthetist is thus at some distance from the patient, and the stopper prevents any blood or secretion from entering the trachea.

The skin is infiltrated with novocain—adrenalin in the midline, from the hyoid bone to the clavical and in a line over the hyoid bone. The deep tissues about the larynx are then injected and a T-shaped incision made down to the larynx. The larynx is skeletonized, the superior thyroid and superior laryngeal arteries being tied as early as possible. After incising and tying the thyroid gland in the midline, an injection of a few drops of 5 per cent cocain with adrenalin is made directly into the trachea, and soon after the trachea is cut through at the first ring. Care should be taken at this stage to see that absolutely not a drop of blood enters the trachea, as the prevention of pneumonia depends upon the freedom of the lungs from blood and secretion. The anesthesia tube may now be inserted into the trachea and the larynx freed from the esophagus from below upward, the cornua being severed close to the larynx.

At this stage of the operation I have found it advisable to follow MacKenty in giving the patient an ether anesthesia, as by this time the mental state of the patient is usually depressed and it is a great relief to the patient to feel that the end of the operation is near. As the toilette of the wound will require nearly an hour more it is a matter of humanity to save the patient this mental suffering.

The larynx is now freed from the pharynx and the opening sewed by a double layer of catgut sutures, after the secretions have been removed by the suction tube cautiously introduced into the pharynx. The pharynx is painted with acroviolet.

The wound closure is made with only four silkworm-gut sutures, thus allowing for free drainage with rubber tubes which have been passed deeply into the neck so as to drain all pockets. The trachea is sewed into the lower portion of the wound, the skin being accurately approximated to the mucous membrane with as little trauma to the cartilage as possible. The tissues about the trachea should be disturbed as little as possible so as to avoid the formation of pockets in which secretions could accumulate. The opening to the trachea cannot be too large as it always contracts to a remarkably small orifice, causing much inconvenience to both patient and surgeon in the months to follow. It is well even to remove all subcutaneous fat about the opening. The secretions are prevented from entering the trachea by a silver tube which has been wound tightly with gauze impregnated with bismuth vaselin.

POSTOPERATIVE CARE

The after-care should be under strict supervision of the surgeon and should include frequent suction with a perfectly acting suction apparatus. In case of infection the wound should be opened rather than let the deeper sheaths of the neck become involved. It is easy to insert silkworm-gut sutures in a few days and bring the skin together again. The patient is gotten out of bed on the fourth day if possible, and is encouraged to sit up as much as possible and so help in the prevention of lung complications.

Feeding is done through a tube which is inserted through the nostril halfway down the esophagus before the pharynx is closed. This tube, if not too large, is well tolerated for nine days and prevents the possibility of the food entering the wound in case any of the sutures should give way. Thick liquid food may be forced through the tube with a syringe and then water passed through to flush it well. There is but little suffering observed in the operated patients and they learn to speak quite readily after healing has taken place.

490 Post Street.

DISCUSSION

I. W. Thorne, M. D. (490 Post Street, San Francisco)—The technique of total laryngectomy does not differ in the intrinsic form of carcinoma and the extrinsic, except for the wideness of the dissection in the latter.

Preparation of such a patient, as Doctor Graham has stated, is most important—cleansing of the teeth and gums with brush and a good dentifrice after each feeding, and the frequent rinsing out of the mouth with Dakin's solution, has become my method; also the use of dental floss between the teeth prior to the brushing. Where artificial teeth are worn, scrupulous care of these is to be practiced. This local preparation should prevail for four or five days before operation, if possible.

I agree with Doctor Graham that the less local treatment these patients get before coming to operation the better; a biopsy is exceedingly dangerous; the diagnosis can be, and should be made without it.

Local anesthesia has never appealed to me in these cases for the following reasons: firstly, the carrying of infection or, rather, implantation infection; secondly, the possibility of blood vessel accident; and thirdly, the possible struggle (in stage of excitement) with an open wound when the general anesthetic is begun in the second stage of the operation. Ether throughout the procedure, to me is much the quieter and simpler method.

A time-saving maneuver, which I have practiced, is as follows: After the trachea has been severed and the free dissection of the larynx begun, then as the esophagus and the pharynx are opened I follow up the freeing of the larynx with the first layer of sutures in the esophagus and the larynx. This obviates the necessity of suction and prevents soiling of the wound to the same extent. The trachea is then sewn in place

and the second row of esophageal and pharyngeal sutures placed and tied.

As Doctor Graham says, the after-care is very important; in fact, upon it depends the success or failure of the whole procedure.

The use of a permanent feeding tube through the nose is troublesome, uncomfortable, and not clean. I much prefer to pass through the mouth and pharynx at feeding times a small stomach tube: this does not disturb your sutures any more than a permanent tube, and the patient is much more comfortable between feedings.

The tracheal opening in the skin certainly does contract and the removal of subcutaneous fat does not prevent this; in fact, it increases this possibility, and the contraction will be just so much greater. A tracheotomy tube must be worn for six months or so, after which time the patient may assume the entire care of it himself. For weeks, however, the operator will have to place and replace this tube as it is forced out, for the patient becomes very nervous over this slight accident, and patient training and encouragement are necessary before he will assume this care.

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JAMES F. PERCY, M. D. (1030 South Alvarado Street, Los Angeles)—In my experience, removal of the larynx is one of the most discouraging procedures in surgery. The immediate postoperative results are usually practically perfect, but within two weeks most of these victims of cancer are dead from bronchopneumonia. Just now I cannot recall that I have ever seen an early case of laryngeal cancer, even of the intrinsic type. I get them after respiratory obstruction and repeated attempts at making an exact diagnosis, including one or more biopsies, have done their worst. When surgeons will give up this mischievous and damaging practice in any form of cancer is one of the real educational problems for the future to solve.

The technique as outlined in Doctor Graham's paper is above criticism, except possibly from the viewpoint of the anesthetic. I give practically all of my patients one hypodermic dose (only) of hyoscin gr. 1/150, and morphin gr. ¼, after they are placed on the operating table. Ether is started as soon as the operative field is prepared. This is employed until the T-shaped incision can be made through the skin with the cautery knife. By that time the hyoscin and morphin are usually all that is required to take the patient through to the completion of the operation. In this way the total quantity of ether rarely exceeds two or three ounces. Every step of the operation is done with my cautery knife. Thus I have no blood in the field at any time, and the patient is also relieved of the danger of my disseminating and stimulating his cancer with a cutting instrument that is not fortified by heat.

Laryngectomy will never have a low postoperative mortality until surgeons can remain with the patient, as I am told MacKenty does in New York, until they feel that the period for complications has passed. Matas of New Orleans meets a similar problem in his postoperative aneurysmorrhaphy patients by personally remaining with them all night the first night. The second and third nights his first and second assistants take their turn, while on the fourth night Doctor Matas again remains with the patient if it is necessary. When his assistants are on duty they also report by telephone to him every two hours during the night. Only by the general adoption of some such plan comparable to that which has been so successfully worked out by these two master surgeons will the present oppressive mortality of total laryngectomies be reduced to within reasonable limits.

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SIMON JESBERG, M. D. (500 South Lucas Avenue, Los Angeles)—Doctor Graham's technique is described in such a manner that it seems delightfully simple and easy of accomplishment. However, the best results of this kind of surgery cannot be had till these cases are turned over early to the man who has perfected himself in this field of surgery. Early diagnosis would more often be made if laryngologists considered every middle-aged patient complaining of hoarseness, as cancer of the larynx until proven otherwise. The diagnosis of early cases is not always as easy to establish; biopsy in many cases is indispensable, but should be followed by surgery as soon as diagnosis is established. Tracheotomy about ten days before laryngectomy lessens the patient's chance of postoperative pneumonia and mediastinal infection. This can be done with the cautery knife, thus probably preventing dissemination of cancer cells.

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DOCTOR GRAHAM (closing)—Instead of using more ether in my cases I am gradually reducing the time consumed in the operation and doing it all under novocain. If the patient is in good condition I finish, by preference, with the local anesthetic. None of my patients have objected to the nasal feeding tube, and the mortality in four cases this year has been nil.

THE LURE OF MEDICAL HISTORY*

CONTRIBUTIONS OF AMERICA TO SURGERY

PART I

An Account of the Surgical Accomplishments of Over One Hundred Pioneers in American Surgery

By HAROLD MAYO F. BEHNEMAN
San Francisco

PROGRESS always rests upon a small number of men of genius. Thus we have in the science of surgery in every epoch and every country, a certain number of renowned men who are the causes and pillars of this achievement." This quotation is from the pen of Dr. William J. Mayo.[1]

Through many generations, then, the writer of this article will present in the following pages only the more famous characters in this medical saga which deals with our own land of America.

The honor of leading this procession of famous names belongs to JOHN BARD (1716-1799) of New York, who in the year 1759, did *three laparotomies for extra-uterine pregnancy*. The "case-history" (as the clinical record was called in those days) is well worth quoting: "Mrs. S., the wife of a mason, about twenty-eight years of age, having one child without any uncommon symptoms, either during her pregnancy or labor, became as she imagined a second time pregnant. She was more disordered in this than in her former pregnancy, frequently feverish, the swelling of her belly not so equal, nor the motion of the child so strong and lively. At the end of nine months, when she expected her delivery, she had some labor pains, but not without absence of flow of waters or other discharge. The pains soon went off, and the swelling in her belly became gradually less, but there still remained a large indolent, movable tumor, inclining a little to the right side. She had a return of her menses, con-

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* Part Two of this paper will appear in the June issue of this journal.

*This account of American surgical accomplishments is written by one who has known none of those of whom he writes, and therefore finds it difficult to present colorful, personal items concerning the men mentioned. It is then, mainly a collection from many sources of contributions made by Americans in about two hundred years of American surgery.

Grateful acknowledgment is made to Dr. Fielding H. Garrison, Washington, D. C., for his valued correction of the original manuscript.

The references will be printed at the conclusion of the entire article.

Dr. Morton making the first public demonstration of etherization at Massachusetts General Hospital, surrounded by medical staff, October 16, 1846.

tinued regular five months, conceived again, and enjoyed better health; the swelling of her belly became more equal and uniform, and at the end of nine months, after a short and easy labor, she was delivered of a healthy child, the tumor on the right side had again the same appearance as before her last pregnancy. Five days after delivery she was seized with a violent fever, a purging, a suppression of the lochia, pain in the tumor, and profuse fetid sweats. By careful treatment, these threatening symptoms were, in some measure, removed but still there remained a loss of appetite, slow hectic fever, night sweats and a diarrhea. To the tumor, which continued painful, and gradually increasing, were applied fomentations and emollient poultices; and, at the end of nine weeks I perceived so evident a fluctuation of matter in it that I desired Doctor Huck, physician to the Army, to visit this patient with me and be present at the opening of it. From the whole history we concluded that we should find an extra-uterine fetus. I made an opening in the most prominent part of the tumor, about the middle of the right rectus muscle beginning as high as the navel, and carrying it downward. There issued a vast quantity of extremely fetid matter, together with the third phalanx of a finger of a child. Introducing my finger by the side of the abscess I found an opening into the cavity of the abdomen, through which I felt the child's elbow. I then directed my incision obliquely downward to the right ileum, and extracted a fetus of the common size at the ordinary time of delivery. The frontal, parietal and occipital bones, and also of the third phalanges of the fingers of one hand separated by putrefaction, remained behind, which I also took out. We imagined the placenta and funis umbilicus were dissolved into pus, of which there was a great quantity. By the use of fomentations and detersive injections, while the discharge was copious, fetid, and offensive, and by the application of proper bandages, and dressing with dry lint only, when the pus was laudable, the cavity contracted, filled up, and was cicatrized in ten weeks. The source of the hectic being removed, with the help of the bark elix. of citriol, and a proper diet, she quickly recovered good health. Her milk, which had left her from the time she was first seized with the fever, returned in great plenty after the abscess was healed, and she now suckles a healthy infant. New York, December 25, 1759."

His diagnosis was certainly to be commended in those days of incomplete education and lack of association with other men.

His son, SAMUEL BARD (1742-1821), *organized the Columbia University Medical School,* and became its dean. He was physician to George Washington, when the seat of the government was in New York. He contributed an excellent manual of midwifery in 1807, and in 1813 became president of the College of Physicians and Surgeons in New York.

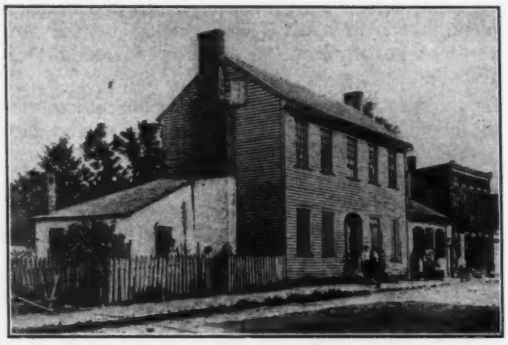
The *removal of an ectopic pregnancy,* was twice successfully achieved by WILLIAM BAYNHAM (1749-1814) of Virginia during the years from 1790 to 1799.

The first recorded amputation of the shoulder joint was done in 1781 by JOHN WARREN (1753-1815), the founder of Harvard Medical School. He was among the first to advocate healing by first intention and was professor of anatomy and surgery at Harvard for over thirty years. He was the chief founder of the Massachusetts Medical Society and its president for eleven years. His son, JOHN COLLINS WARREN (1778-1856), became a very resourceful surgeon of New York.

WILLIAM SHIPPEN, JR. (1736-1808), of Philadelphia was *the first public teacher of obstetrics in this country,* an event of some consequence for the advancement of male midwifery. He organized, with JOHN MORGAN (1735-1789), the medical department of the University of Pennsylvania, and was professor of anatomy and surgery in that institution. He gave the first course of lectures presented in a medical school in America on November 14, 1765. From 1777 to 1780, he was Surgeon-General of the United States Army. In the same field, notice must be taken of CHARLES MCKNIGHT of New York, who in 1794 removed by celiotomy, a nine months old fetus from an extra-uterine pregnancy, with full recovery.

JOHN KING of Edisto Island, South Carolina, performed a remarkable operation for abdominal pregnancy in 1816, saving both mother and child by cutting through the walls of the vagina and applying forceps with abdominal pressure exerted on the fetus from above. He wrote the *first book on extra-uterine fetation* in 1818, entitled "An Analysis of the Subject of Extra-Uterine Foetation, and of the Retroversion of the Gravid Uterus."

We must not overlook THOMAS BOND (1712-1784). "He was apparently *the first in the United States to perform lithotomy,* although there is a record of such a procedure in 1756, a DOCTOR JONES of New York being credited with this procedure. BENJAMIN FRANKLIN (1706-1790) of Boston, inventor of the bifocal lens and the flexible catheter, "asserts that it was Doctor Bond who founded the Pennsylvania Hospital." Besides their surgical contributions, "Bond and his



The Danville, Kentucky, house in which Ephraim McDowell performed the first ovariotomy. The operation was performed in the room on the left. Cut with kind permission of Dr. August Schachner.

son, PHINEAS BOND, rendered distinguished services to the American cause in 1776, by taking an active part in the organization of the medical department of the Army." [2]

A name familiar to all medical men is that of EPHRAIM MCDOWELL (1771-1830), who was *the father of gynecology in this country.* "Impressed with the sad and hopeless fate of women with ovarian disease," in 1809 he performed the first ovariotomy for the specific purpose of curing ovarian disease. He is rightly known as the "Father of Ovariotomy," and was very skillful in many branches of surgery. Friedberg states that "he founded abdominal surgery." [3] His life story has been ably and faithfully told by Samuel D. Gross and again by August Schachner of Louisville, Kentucky. McDowell's life was full of activity and events of interest. Finally settling in Danville, Kentucky, then an outpost of civilization, his fame as a surgeon spread fast, and his first ovariotomy patient lived for thirty-eight years after the operation. I wish I could present the whole story in detail of that eventful occurrence. McDowell happened to be called to a small village about sixty miles from his home to see a sick woman, one Jane Todd Crawford. When they met "it was a case of a daring man and a courageous woman coming together to settle a problem." [4] The colorful, romantic story of the events that followed is told in detail by Dr. August Schachner.[4] This brave woman listened carefully to McDowell's explanation of what he would like very much to do to her, and weighed the situation carefully for quite a while. He told her of the belief he had that he could remove this mass within her abdomen, but also honestly explained the great risk she was taking if she submitted to surgery. In the dark days before anesthesia, and modern Listerian antisepsis, fear tore at the hearts of those who realized the great mortality.

But Mrs. Crawford had deep faith in McDowell's ability and sincerity, and one day in 1809 she appeared in McDowell's home in Danville, requesting that he operate. "Considered in the light of present-day surgery, the features of the operation which bear emphasis are:

1. It was performed without an anesthetic.
2. The incision was on the left side, nine inches long, parallel to and three inches from the rectus abdominis muscle.
3. The tumor was freely movable, with a pedicle of sufficient length to enable ligation before evacuation of the contents.
4. After opening up, the successive steps were: ligation of the fallopian tubes and pedicles, near the uterus, evacuation of the contents, extraction and removal of the solid portion, replacement of the intestines, the draining of the peritoneal cavity by turning the patient over, and the closure of the abdomen with interrupted sutures allowing ligation of the pedicle to pass out the lower end.
5. The time of operation was twenty-five minutes.
6. The weight of the cyst was twenty-two and one-half pounds.
7. The recovery of the patient: in five days she was up making her bed and in twenty-five days she went home, and twenty-one years later McDowell exhibited her alive and healthy.[4]

"During many years McDowell's operation of ovariotomy failed to maintain professional approval." [2] Despite all this "it soon became the most successful major operation in surgery." [4] McDowell repeated this operation many times, with equal success.

In the next thirty-five years only four men successfully performed ovariotomy; they were Nathan Smith, Alban Goldsmith, David L. Rodgers and John Bellinger.

The first of these men, NATHAN SMITH (1762-1829), of Massachusetts, a medical graduate of Harvard in 1790, performed the second successful ovariotomy in 1821. He was a great organizer, who filled the chairs of Physiology and all other departments in the medical school of Dartmouth College, and later in Yale, Bowdoin, and Vermont. He was a very able lithotomist, and did the first staphylorraphy. Oliver Wendell Holmes described him as not "only filling a chair, but a whole settee of professorships."

Two famous surgeons, brothers too, JOHN LIGHT ATLEE (1799-1885) and WASHINGTON LEMUEL ATLEE (1808-1878), *really established ovariotomy* after McDowell's pioneer work. They perfected a technique which enabled them to perform in 1842 and 1843, four hundred and sixty-five operations. As with McDowell, they were at first bitterly condemned by colleagues and contemporaries, but lived to be highly honored and rewarded.

Contemporaries at this time of any note were comparatively few. WALTER BRASHEAR (1776-1860) of Maryland performed the *first successful amputation of the hip joint in America* in 1806. In 1799, while in China as a ship's surgeon, he amputated successfully a woman's breast. "He was a many-sided character—doctor, lawyer, legislator, naturalist, and merchant." [4] His most notable years were spent in Kentucky, from 1813 to 1817.

A hard worker and continuous contributor to our knowledge of surgery, was FREDERIC RIDGELEY (1757-1825). A staunch friend of Rush, he was the first teacher of midwifery in Transylvania University, and Surgeon-General to the army of General Anthony Wayne.

Another Kentuckian, CHARLES MCCREARY (1785-1826), first successfully excised the clavicle in 1813.

In other branches of surgery we find PHILIP WRIGHT POST (1766-1822) of Long Island, New York, who was the *first to tie the primary carotid artery in its continuity with success* (1813), as well as the first to ligate the subclavian artery outside the scaleni muscles in 1817. This was considered "his master stroke in surgery."[5] He was the first in America to ligate the femoral artery successfully, which he did in 1796, for popliteal aneurysm. Post was assisted by Valentine Mott and his ligature needle. "This was thought to be a complete success and answer to the taunt: 'What have you American physicians and surgeons ever accomplished?'" He also brought back from Europe the material for America's first museum, according to John Augustine Smith. The latter says we may deduce two useful lessons from Post's life. First, "that fortune is not so capricious in her favor as many imagine, and, secondly, to secure her favor, in other words, to attain the success of Doctor Post we must first acquire his skill and tact and what is perhaps more difficult, certainly more rare, we must practice these qualities with his steadfastness and virtue."[5]

Another great *pioneer in vascular surgery* was VALENTINE MOTT (1785-1865) of Long Island, New York. "It would be impossible to refer in detail to the individual operations, but if we inquire further into the history of the subject, we find that if the records of American operators in the ligature of large vessels (arterial trunks) are excluded, there seems to be little left to the credit of other countries."[9] Mott, in 1818, ligated the innominate artery for the first time in the history of surgery. In this dangerous pre-antiseptic period he successfully ligated one hundred and thirty-eight great arteries for aneurysm. Mott was also a bold and successful operator on the bones and joints. He did the first operation for osteosarcoma of the mandible, and he was as well the first to operate successfully for immobility of the same member. He ligated the common iliac in 1828, was the inventor of several valuable instruments, and amputated at the hip joint in 1824. It is time well spent if one turns back to the third volume of the *American Journal of Medical Science* published one hundred years ago next year, and reads the detailed account of Mott's excision of a clavicle for osteosarcoma. He was at that time professor of surgery at Rutgers College, New York. In the first paragraph of retrospection and advice he writes: "We think it may henceforth be regarded as an *axiom* that it is the duty of a surgeon to operate in every case which allows of a rational hope of success, either of improving the patient's condition or of preserving his life. It is almost superfluous to add that, in arriving at this conclusion, we do not believe it proper for every man who is *nominally* of the profession to assume such high responsibilities, but that we regard those as *surgeons,* and those alone, who have, by conscientious devotion to the study of our science, and the daily multifarious duties, acquired that knowledge which renders the mind of the practitioner serene, his judgment sound and hands skillful; while it holds out to the patient rational hopes of amended health and prolonged life."[7]

BENJAMIN WINSLOW DUDLEY (1785-1870) of Virginia was a contemporary of Mott's. For thirty-five years he was professor of anatomy and surgery in Transylvania University. He performed two hundred and twenty-five lithotomies, without a death until after Case No. 100. He made use of the lateral operation, using the gorget invented by Cline of London. Gross states that he was the *first to ligate the subclavian artery* in 1825 *for an aneurysm* "larger than a quart pitcher."[4] He ligated the common carotid in 1841, and was of note for his theories regarding the use of boiled water and boiled instruments in surgical antisepsis.

"The foremost ovariotomist of all time" was JOSHUA TAYLOR BRADFORD (1818-1871) of Kentucky.[4] At one time the *foremost surgeon of the West,* he performed thirty consecutive ovariotomies with 90 per cent cures and 10 per cent failures.

Now turning to one of the most interesting characters of his age, JOHN MCLOUGHLIN (1784-1857), the so-called "Father of Oregon," we find him responsible for the establishment of the first hospital of the great Northwest, and the first Governor on the North Pacific Coast. "His diagnostic and surgical ability was eclipsed only by his ability as a statesman."[8] His life story is one replete with adventure, romance and purpose, most of the latter directed toward medicine and surgery. "The immigrants and the Indians who had learned to love and trust their great white-faced master—in fact the whole little nation along the Columbia wept when he died and felt their little world was more lonesome when John McLoughlin went on his last call."[8] He was a pathfinder and statesman as well as a surgeon of great ability.

Prof. George Kasson Knapp's painting of "The First Ovariotomy." Cut with kind permission of Dr. August Schachner, author of "Ephraim McDowell, Father of Ovariotomy."

The "Willard Parker Hospital for Contagious Diseases" of the Health Department of New York City stands in tribute and as a testimonial to WILLARD PARKER (1800-1884) for over thirty years professor of surgery at the College of Physicians and Surgeons of that city. "He originated the operation of cystotomy (1846-1854) for irritable bladder, and the operation for perityphilitic abscess." [9] He was the first, after Hancock of London (1848), to operate for appendicitis, and tied the subclavian artery five times. He was one of the organizers of the present medical department of Syracuse University. Princeton conferred the LL.D. degree upon him in 1870. He was "so identified with the growth of charitable enterprises in the way of hospitals and dispensaries in New York City, that he was associated with most all of them." [9]

DANIEL BRAINERD (1812-1866) of New York, *"The pioneer surgeon of the Middle West,"* [10] invented the bone drill, and made several good contributions on the treatment of fractures and deformities. He settled in Chicago in 1837 and organized Rush Medical College in 1843.

WILLIAM GIBSON (1788-1868), scientist, author, artist, and friend of Lord Byron, had an eventful surgical record. In 1835 and 1838 he performed two successful cesarian sections on the same patient, who lived for fifty years after the first operation. In 1824 he published the worthy and once much-used "Principles and Practice of Surgery."

JOHN RHEA BARTON (1794-1871), in 1834, was the first surgeon to wire a fractured patella with success.

Advancing now to 1849, we find that HARBERT was the first to suggest the operation for celiotomy for ruptured tubal pregnancy in early stages, a starting point in the history of this procedure. Barton, by the way, did an osteotomy for ankylosis of the hip joint in 1826.

MASON FITCH COGSWELL (1761-1830) of Connecticut first successfully ligated the common carotid artery for primary hemorrhage in 1803.

PHILIP SYNG PHYSICK (1768-1837) of Philadelphia, "that unsurpassed lithotomist," invented the tonsillotome and was the first to describe diverticulum of the rectum. He is often called the *"Father of American Surgery"*; [10] he was Surgeon-General to the Pennsylvania Hospital in 1794 and professor of surgery in the University of Pennsylvania from 1805 to 1818. He introduced into surgery an operation for artificial anus (1826), the kid and buckskin ligatures (1816), and was the first American to wash out the stomach with syringe and tube in a case of poisoning in 1802.

An Englishman, DANIELS, of Georgia introduced the weight and pulley for extension in fractures of the thigh.

A pioneer *Army surgeon* was SAMUEL PRESTON MOORE (1813-1889). He was an Army surgeon for twenty-six years, and on November 29, 1861, was made Surgeon-General of the Confederacy. In the face of overwhelming difficulties he organized the medical department of the Confederate armies, and founded its literary organ, *The Confederate States Medical and Surgical Journal.* He made a careful study of indigenous plants during the war, as sources of materia medica, when many medical supplies were cut off from the South. Lastly he organized the Association of Army and Navy Surgeons of the Confederacy in 1863.

Another pioneer in surgery was MOSES GUNN (1822-1887), first professor of surgery at Michigan and professor at Rush from 1867 until his death twenty years later. "He made many minor and one great contribution to the science of surgery. This was his work on dislocation of the hip joint." [11]

Designated by Gross as "the great commoner of American Medicine" was WARREN STONE (1808-1872).

With Doctors THOMAS HUNT and HARRISON, he founded the Tulane Medical School of New Orleans in which he was "Stone Professor of Anatomy and Surgery." He made many surgical contributions to the *New Orleans Medical and Surgical Journal,* of which he was editor.

Let us now turn to "a spot in the wilderness of the new continent," in a little village in Georgia, where an American, CRAWFORD W. LONG (1815-1878) of Danielsville, Georgia, is seen timidly and hesitatingly, but nevertheless independently of all foreign suggestions, attempting to remove, for the first time with ether, a growth from a patient whom he has just put to sleep. This was in 1842, and the chief actor is well-nigh forgotten.

Again the scene turns to America. The lights are brighter, and we are in Massachusetts General Hospital. The date is October 16, 1846. On one side we see W. G. T. MORTON (1819-1868) of Charleston, Massachusetts, confidently administering the new letheon, and saying finally to the distinguished operator, Doctor Warren, "Sir, the patient is ready." The operation is performed without a sign of pain, and Doctor Warren, himself amazed, turns to the astonished audience, saying, "Gentlemen, this is no humbug." From that moment the idea of the suppression of pain ceased to be a dream and became a living reality." [6]

Thus to Crawford W. Long is due the honor of having first used ether as anesthesia in surgery in 1842. And thus to JOHN COLLINS WARREN (1778-1865) comes the honor of having *established ether anesthesia* in surgical practice. There is not room nor is it necessary here to discuss the bitter fight that waged through the years as to priority in this discovery. To remember that it is an American contribution is the vital thing and of that we are proud. Those who are interested more in this most fascinating story of the beginnings of ether anesthesia may turn to a paper read before the Johns Hopkins Historical Society, November 8, 1896, by Hugh H. Young,[12] entitled "Long, the Discoverer of Ether Anesthesia—A Presentation of his Original Documents." He gives the facts of the whole situation, with descriptions of the famous "ether inhalation parties," the history of the first case anesthetized by Long, and the documents pertaining to the unpleasant controversy.

CLINICAL NOTES, CASE REPORTS AND NEW INSTRUMENTS

XANTHOMA DIABETICORUM

CASE REPORT

By F. H. STIBBENS, M. D.
Oakland

XANTHOMA diabeticorum is an exceedingly rare skin condition, first described by Addison and Gull in 1851. The great majority of the reported cases since that time have occurred in glycosuric individuals. The disease does occasionally occur in individuals in whom glycosuria is absent, however. Ninety per cent of all reported cases have appeared in males between the ages of 21 and 57 years. Politzer, however, reported the condition in a boy of 17.

The lesions usually occur over the buttocks, knees, and elbows; as rather thick, hard, yellowish papules and plaques, varying in size from a small shot to that of a pea or larger, superimposed upon a reddish base. These lesions may be tender or even painful, and the sensations of burning or itching may be absent or very marked. Resolution usually occurs spontaneously without leaving any change in the skin texture, and takes place in many cases without any relation to the amount of sugar present in the urine.

Goldstein and Harris reported a case in 1927 in which three types of resolution occurred simultaneously, with little or no reference to the general condition of the patient. Some of the lesions disappeared, leaving no change in the skin structure; some left marked pigmentation; and some marked and destructive scarring.

Anatomically the xanthoma nodules are very similar to those of xanthoma multiplex, except that there is much more evidence of an active and inflammatory process and less of connective tissue increase.

CASE REPORT

On October 6, 1926, Q. K. T., a Chinese butcher, weighing 230 pounds, presented himself, complaining of having gradually developed a number of raised, hard nodules and papules in his skin during the preceding year. These had not been red nor had they caused him any discomfort; but he had not liked their appearance and had become alarmed because they were becoming more numerous and because the individual lesions had gradually enlarged.

He was married and had two children, one of whom, a girl of three years, was suffering from infantile eczema. The family history was otherwise negative.

He had always been well and strong, having had no physical ills other than moderately frequent attacks of headache. He was a large eater and drank rather large quantities of tea. Was very fond of rice and sugar, never stinting himself in the use of either. He had not noticed any polyuria.

Examination of the skin showed some eighteen or twenty ocher-colored papules scattered over his arms, palms, thighs, soles, and trunk, without any apparent predilection for any one part.

Several of the diseased areas were from one-half to three-fourths inches in diameter, the papules being arranged in distinct circles about a clear, slightly bluish center. None of the papules, even those appearing singly, showed any redness about the base. They were all very hard and shot-like, not tender or painful, and were freely movable upon the subcutaneous tissues. The isolated papules varied in size from that of a small shot to nearly one-fourth inch in diameter.

The urine had a specific gravity of 1030 and gave a very marked reaction for sugar with the Fehling test.

He was advised to give up the use of sugar and rice and to substitute saccharin and diabetic bread. In addition to the diet regulation he was given 1 cc. of Iletin (Lilly) hypodermatically, three times a week.

At the end of six weeks all of the papules and circles had disappeared, only a light pigmentation and a slight atrophy of the skin remaining at the site of each lesion. This pigmentation and atrophy has remained to the present date.

The sugar in the urine disappeared within one week after treatment was instituted, and by the end of the sixth week he had lost some thirty-five or forty pounds in weight. At that time he stated that he felt better than he had been for a long time and that he had no more headaches.

Since the disappearance of the lesions he has reported only at long intervals and says that he has gradually resumed the eating of rice and bread in small amounts and that he has had no recurrence of his headaches. No glycosuria has returned, except at times when he overindulges in carbohydrates. No new skin lesions have appeared during the past year.

COMMENT

The striking features of this case were:

1. The absence of redness at the base of the lesions;
2. The occurrence of lesions on the palms and soles;
3. The occurrence of circles of papules about a bluish center; and
4. The persistence of slight pigmentation with a slightly atrophic condition at the site of former lesions.

830 Oakland Bank Building.

ACUTE ANGIONEUROTIC EDEMA OF THE LARYNX

CASE REPORT

By BENJAMIN KATZ, M. D.
Los Angeles

ACUTE angioneurotic edema of the larynx is a rare but very dangerous complication, resulting many times in the death of the patient. No way of foreseeing or preventing such edema is known. The literature is very scarce and the subject is known very little to the general practitioner or to the specialist. Further data are greatly needed. The writer therefore believes it worth while to report a case which occurred recently in his practice and to discuss, briefly, the literature.

CLINICAL DESCRIPTION

The best clinical definition of this affection can be expressed by the words of C. Theisen.[1] "The writer has always believed that the type of laryngeal edema is frequently neurotic when it comes apparently out of a 'clear sky' and develops so rapidly that alarming difficulty in breathing comes on almost at once, without a definite preliminary infection somewhere in the throat, as an etiologic factor. There is rarely any temperature. The patient is perfectly well and in fifteen or twenty minutes is struggling for air. There have been a number of cases of sudden death in this form of neurotic or angioneurotic edema reported."

H. Fisher of Breslau,[2] a physician to the courts, demonstrated twenty original specimens of the

larynx collected by himself, where sudden death due to edema of the glottis had occurred, and discussed the medico-legal aspect of this disease, because a suspicion of poisoning or trauma inflicted by another person in these extremely sudden deaths is liable to follow.

ETIOLOGY AND REVIEW OF CASE REPORTS

The writer has analyzed the available case reports to determine to what conditions this complication has been ascribed.

Staffleri [3] considers inherited nervous conditions an important etiological factor, a result of exaggerated excitability of certain nerves controlling the circulation of lymph. The cause of the nervous hyperexcitability, according to this author, is defective endocrine function with thyroid insufficiency predominating. Osler points to the same cause and reports a family in which, in the course of five generations, nineteen members out of a total of thirty-nine had angioneurotic edema, two dying of edema of the larynx. He states that edema may be induced by some toxin in the intestinal tract, and in a certain percentage of cases the larynx is the first part to be involved.

Gastric disturbances are cited as the etiologic cause by some authors. F. Simon reported a case of edema of the larynx which developed after the patient ate fish. V. Schrotter [4] mentions a case in which a patient with a chronic intestinal catarrh likewise developed edema of the larynx and died.

Edema of the larynx has followed tonsillectomy. D. Husik [5] reports a case in which tonsillectomy under general anesthesia in the University Hospital, Philadelphia, was followed by a slowly progressive edema toward the evening of the next day. After midnight a tracheotomy was necessitated. The patient recovered gradually. When edema develops rapidly the patient presents signs of a general collapse in a few minutes. Even when a correct diagnosis is made there is not always time to perform a tracheotomy. In the *Kentucky Medical Journal* Tuley reports a case in which death occurred within fifteen minutes, while preparations for a tracheotomy were being made. C. Theisen suggests that some cases of sudden death may have been due to localized cerebral edemas involving the respiratory or cardiac centers.

Three cases reported by F. Kennedy [6] of brain swelling in angioneurotic edema support this opinion. Protein sensitization test in one proved the patient to be susceptible to milk. P. Bassoe, discussing Drysdale's [7] paper about acute edemas, reported a case in which a brain tumor was suspected and decompressive operation performed. The subsequent history of the case, however, proved that the condition was angioneurotic edema, many attacks having occurred over a period of twelve years on different parts of the body. Finally some badly abscessed teeth were removed and, according to G. Hall, the patient recovered completely. Bassoe admitted that this was a case in which apparently the brain had been first affected.

While some authors think that food protein sensitization is the etiologic basis for certain cases, the symptoms being interpreted as anaphylactic disturbance, others believe that the outstanding cause is sensitization to bacterial rather than to food proteins, as a result of focal infection. H. Barber [8] has observed cases in which the edema completely subsided after extraction of septic roots, treatment of pyorrhea, eradication of sinus infection, and enucleation of tonsils. Oberndorf [9] reported a case of angioneurotic edema which entirely disappeared after an acutely inflamed appendix had been removed.

In some cases the etiology of the edema of the larynx is entirely obscure. For instance, W. Freudenthal [2] reports three cases of sudden edema of the larynx with one death in women after childbirth. Previous examination had not revealed any abnormality in these patients.

Rethi reports a case in which angioneurotic edema of the larynx occurred twice during menstruation.

Malnutrition apparently is sometimes a causative factor in edemas, as shown by His, of Berlin, who reports on cases studied by him during the last war; these cases improved when fat was added to the diet.

CASE REPORT

Mr. B., 38 years old, came to my office April 26, 1927, and gave a history of having been in the Pasadena Hospital for twenty-five days, where a diagnosis of ulcer of duodenum, chronic appendicitis, chronic tonsillitis, chronic mitral endocarditis (well compensated) and gastric hyperacidity had been made and a tonsillectomy advised.

The operation was performed next day at my office under local anesthesia, the patient being under my personal care for about an hour and a half following the operation and feeling well. Then he was left under the care of a nurse, and was all right for another three-quarters of an hour, when he complained of not feeling well. The nurse took his pulse—it was 80. The patient was made comfortable in bed, gave a sign that he was better, but in a few minutes complained again. He was asked if he was nervous, and instructed, as is usual after tonsillectomies, to write the answer. He wrote: "I am not nervous, but can't breathe. O my . . ." and fainted. His head was bent down, the feet lifted, 1 cc. of adrenalin chlor. 1:1000 injected, and a physician called who arrived in two or three minutes. He found the patient with a very weak pulse and unconscious, again injected 1 cc. of adrenalin and started artificial respiration. At this time I returned and, interpreting ex consilio the condition of the patient as a collapse, adrenalin was injected into the heart and artificial respiration continued. A pulmotor was sent for and arrived in ten or twelve minutes. After the pulmotor was in action about fifteen minutes I decided to examine the patient's throat to determine if there were any bleeding from the tonsils. I opened the patient's mouth, removed the air tube inserted by the fireman and the packing from the fossae, and found no bleeding. The pulmotor was again started and artificial respiration kept up for a certain time, but all efforts to revive the patient failed.

Autopsy findings (Dr. A. F. Wagner): Stomach, intestines, kidneys, heart—negative. Lungs: congestion. Spleen enlarged. Thymus gland enlarged, not subinvoluted. Larynx: edema of the epiglottis and of the larynx upon and about the vocal cords. Not any sign of inflammation in the larynx nor any blood in the stomach.

Verdict of coroner's jury as to the cause of death: "Strangulation following edema of the epiglottis and of the larynx, following operation for removal of tonsils performed by Dr. Benjamin Katz. We believe

that Dr. Benjamin Katz rendered medical aid to the best of his ability."

From an etiologic point of view the writer's case closely resembles Schrotter's and Husik's cases, namely, the patient having a chronic catarrh of the intestines associated with an enlarged thymus and spleen (status lymphaticus) developed about two hours after tonsillectomy, an acute fatal edema of the larynx.

PATHOLOGY

Hajek experimentally demonstrated by injection of liquids into the larynx of a cadaver that edema spreads according to certain laws. The great vascularity of the larynx, together with the fact that the blood vessels of the mucous membrane are practically unsupported, permits rapid congestion, and there is a leakage into the perivascular tissue. The exuded serum fills the intercellular spaces and lymph channels, giving them an appearance of a semitransparent swelling. There is no inflammation present. According to several case reports proven clinically and microscopically, the edema of the larynx can be accompanied by simultaneous edema of the brain, probably involving the respiratory and cardiac centers.

DIAGNOSIS

Presence of a semitransparent swelling in the larynx without any inflammatory condition, accompanied by signs of difficulty in breathing, makes the diagnosis possible when the progress of the edema is slow. In rapidly developing cases of edema the symptoms of general collapse prevail, the edema being detected only after death.

TREATMENT

C. Theisen, who had a few cases of edema of the larynx under his observation, recommends a cold spray of adrenalin 1:5000 and an ice coil around the neck. When difficulty in breathing develops, incisions with the Schrotter-guarded laryngeal knife or a tracheotomy is indicated. It is worth while to mention that in rapidly progressing edema of the larynx the patient may die before a tracheotomy can be performed, or even when a tracheotomy has been done, if edema involves the brain.

SUMMARY

Acute angioneurotic edema of the larynx is a rare but very dangerous complication, which, in our present knowledge, can neither be foreseen nor prevented. Its etiology is obscure. In recorded cases inherited nervous conditions, gastric disturbances, focal infection, endocrine disorders, malnutrition, and anaphylactic disturbances have been noted. The treatment indicated often fails because of the rapidity of involvement or because of edema of the brain. The literature of the subject is very scanty. Therefore all cases should be reported in order that further data may be collected for study.

520 West Seventh Street.

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A NEW GLASS DRAINAGE TUBE FOR SUPRAPUBIC PROSTATECTOMY

By L. Lore Riggin
Pasadena

Drawing, to scale, of a glass drainage tube for use in suprapubic prostatectomy cases. The drawing is self-explanatory.

Advantages claimed over the Freyer tube are:

1. By the two "arm" outflow, the patient may lie on either side without disturbing the drainage.

2. The two "arm" supports on the dressings, make a more comfortable dressing for the patient.

3. By the "through-and-through" opening of the large tube, obstructing clots may be attacked by alligator forceps and be removed.

4. Through this same avenue the catheter may be passed when doing the postoperative irrigations of the bladder.

5. Free exit of urine and irrigating solutions is possible without soiling the dressings, and without causing tension on the bladder walls, and without changing position of the patient.

6. Much easier postoperative care of the bladder with the least discomfort to the patient.

The large upper opening is kept closed with a rubber stopper when not used; each side "arm" has a length of soft rubber tubing attached, with a glass connection on the distal end for making connection with the tubing leading to the reservoir (connection being made with the dependent one).

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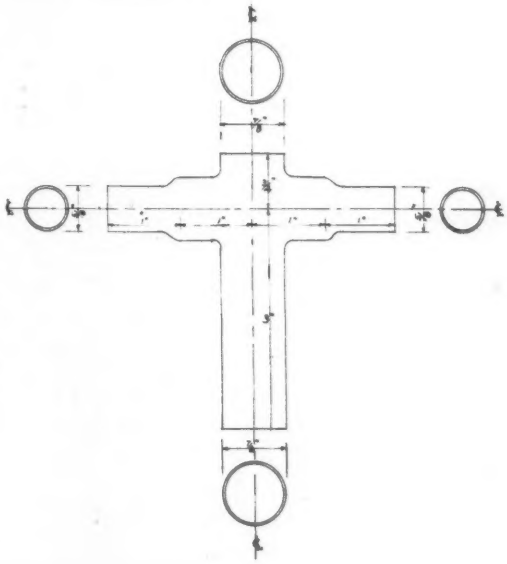

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

THE RELATION OF THE DUCTLESS GLANDS TO THE PSYCHOSES

Eva Charlotte Reid, San Francisco—In recent years psychiatrists have been eagerly following the developments of endocrinology, hoping that a ray of light might be shed upon the etiology of the psychoses and a scientific line of treatment evolved. So far they appear to have been following a will-o'-the-wisp. Years ago Doctor Southard of Boston predicted "The time is coming when there will be no psychologists and psychiatrists left. The endocrinologist will eliminate us all. He will take all the cases of mental disease, explain them on the basis of misbehaving ductless glands and cure them all." While this golden era seems as yet far distant, endocrinology appears to offer the most reasonable explanation of the psychoses other than those produced by toxins and those associated with organic brain disease.

Anyone who has made routine examinations in a large hospital for mental cases cannot but be struck by the frequency with which evidences of endocrinopathies appear,—pseudohermaphroditism, infantile sex organs, menstrual irregularities, adiposities, faulty skeletal development, gigantism, absence and irregularity of teeth, and abnormal hair distribution. After years of observation one learns to expect a less hopeful prognosis in cases where these anomalies are most marked. In every state hospital the "residue which remains" is composed largely of these anomalous individuals. It was doubtless the prominence of these defects especially in dementia praecox that form seventy-five per cent of these cases, which led Adler to formulate his theory of organ inferiority, namely that a badly constructed body expresses itself at the psychological level in defects of adjustment and peculiarities of conduct. In other words, the abnormal conduct is a manifestation of an attempt by the individual to compensate for organ inferiority. Others believe that the trouble is primarily a psychological condition induced by faulty training and environment, and that the mental regression reacts upon the physical organism. It is more reasonable to suppose that both the organic and psychological are manifestations of an inherent development anomaly.

For the past ten years Mott of London has been carrying on pathological investigations on the ductless glands of mental cases. He claims to have discovered changes in the gonads, pituitary and adrenal glands which appear to be pathognomic of dementia praecox. Other investigators, with the exception of Lewin of Washington, D. C., have been unable to confirm these findings. In the November number of the *American Journal of Psychiatry,* Lewin reports in detail the result of the investigation of the ductless glands of a series of cases at the New York State Psychiatric Institute. His conclusions are as follows:

"We would like to emphasize that we do not mean to assert the absence of any possible relation between endocrine organs and psychoses in those groups such as dementia praecox where our findings were essentially negative. We do, however, feel that there is no evidence in our material of such anatomic psychiatric correlation, and for the dementia praecox groups in particular, we believe that our material was quite comparable to the material on which several, in our opinion, untenable hypotheses have been based."

Chemical investigation and therapeutic research have been equally barren of results. While the outlook is far from hopeful, it must be remembered that modern psychiatry and endocrinology are both in their infancy, having been born, one might say, in the present century, and there is a great unexplored field for future research in their respective fields and in their relation to one another.

* * *

Leo L. Stanley, San Rafael—One cannot go through the wards of an insane asylum and see the patients without being struck by evident manifestations of diseases of the ductless glands.

The hyperexcitability, restlessness and apprehension displayed by the thyrotoxic, and the sluggishness, mental depression, languor, and lack of initiative by the strumiprivous cannot be mistaken.

The physical characteristics are striking; thin, gaunt, exophthalmic on the one hand; fat, heavy, myxedematous on the other.

It cannot be doubted that the gonads of both sexes play an important part in the mental makeup of the individual.

The insanities of adolescence are familiar. At this period of life the biological urge for mating and perpetuation of the race is at its highest. Our religions and code of morals forbid normal exercise of these passions. Very grave and serious conflicts arise in the maturing mind. Some of the weaker go under as a result of this strain. It is held that more patients become insane from suppression of sexual function than from overindulgence. All medical men have had in their experiences cases of insanities of pregnancy, as well as having seen the numerous vagaries of appetite and action while the mother was carrying her unborn child.

Then, too, there are the disturbances of the menopause when the ovaries have laid aside their

activity, the hot flushes, the headaches, the mental peculiarities to greater or less degree.

The insanities of the fourth decade are not uncommon. It is recognized by many that the female shows mental aberrations about the time of her menstruation. Evidently the action of the ovaries plays an important part in these.

In the male, masturbation is one of the frequent accompaniments of insanity. This may denote a hyperactivity of the testes. An attempt has been made to associate dementia praecox with the size and weight of the gonads.

In the numerous lewd and lascivious acts committed by old men, the function of the testes of these individuals has practically ceased. Sexual memories are, however, still retained and perverted acts are committed to appease a memory of sex experience of youthful days.

It is recognized that insanities are caused by toxins such as those produced by alcohol, by syphilis, beri-beri, and other similar agencies.

Temporary insanities are caused by the poisoning of the fevers, as typhoid, pneumonia and others.

May not the whole subject of insanity then be considered as a disease due to abnormal chemical bodies bathing the brain cells and vitiating and disturbing their normal functions? Many of these deleterious products may come from one ductless gland or from several of them, and these products may be produced by an overactivity, an underactivity or a perverted activity of the gland or glands.

The great burden which the insane, the degenerate and the criminal imposes upon the state, warrants the greatest efforts in research toward finding the relation of ductless glands to the psychoses.

* * *

Donald Raymond Smith, Talmage—A relationship between psychoses and the ductless glands has never been demonstrated up to this time. Some work has been done along this line, the result of which seems to indicate that there was some relationship between abnormal mental functioning and abnormal functioning of one of these glands. Other investigators along the same line of research, come forward with the statement that they are unable to demonstrate any relationship between disordered functioning of the ductless glands and the psychoses.

It has been known for some time that one cannot demonstrate pathological lesions in any of the ductless glands as associated with any definite type of psychosis. Newer methods of examination, and by the same methods, a demonstration of lesions not now possible may in the future develop some relation between mental and glandular defect. Further assistance in the understanding of mental diseases may come from chemical research in connection with the ductless glands but so far investigation carried out along this line has failed to show any definite relationship existing, but failure of the past in this, however, should not curtail this work in the future because newer methods of examination, and a better understanding of biochemical relations existing within the human body may establish more definitely causes and effects.

This work, however, must be done by those equipped along this highly specialized field, working in connection with a clinician who is able to furnish the nature and the history of the psychosis.

* * *

Anita M. Muhl, San Diego—Much has been written about the rôle of the endocrines in producing psychoses and lesser abnormal mental states, but the reverse reaction has not been discussed so frequently. That a dysfunction of the thyroid and the pituitary can produce pathological mental symptoms, we know, but we also know (though we do not pay so much attention to this) that chronic emotional and mental reactions of the destructive type can produce disturbances of the glands of internal secretion.

It has been demonstrated that removal of the thyroid gland in cases where there have been concomitant mental symptoms has cleared up the psychotic and psychoneurotic disturbances, but on the other hand, *removal of the untoward emotional* state has cleared up many a case of hyperthyroidism.

One amusing case comes to mind. A very famous eastern surgeon sent a young woman suffering with extreme hyperthyroidism to a psychiatrist with a request to please get rid of the patient's worries and fears so the operation could be performed. The psychiatrist, who was a most able psychoanalyst, succeeded so well that when the patient went back to the surgeon she was not only minus her fears and worries, but minus her toxic goitre as well!

This interrelationship of the endocrines and the emotions, together with the rôle played by the vegetative nervous system in the interreaction can no longer be ignored by the thinking medical profession. If our endocrines are out of order we suffer physically and emotionally; if our emotions are chronically upset we are bound to suffer not only mentally, but through endocrine disturbances, physically as well.

Marked endocrine dysfunctions are not so apt to produce psychoses in individuals who are not predisposed; (by predisposed, meaning individuals who are suffering with mental conflict). There are many cases of severe endocrine disturbance with no psychotic symptoms just as there are many cases of psychoses with apparently no endocrine change.

If we but try to understand the patient as a whole—not as a case of psychosis, or a case of hyperthyroidism or hyperpituitarism; nor yet as a case of hyperacidity or cardio-vascular-renal disturbance, but as an individual who has an illness which is but a manifestation of the disturbed equilibrium of the entire system (physical, biochemical and mental), then perhaps we will begin to realize the importance of the endocrine disorder in producing emotional disturbances and of the equal importance of disturbed emotions in producing endocrine disorders.

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EDITORIALS

THE ADDRESS OF PRESIDENT PHILLIPS

Dr. Percy T. Phillips' presidential address to the California Medical Association, printed in this issue, presents to the consideration of our members the important subject of narcotics. He pertinently states that this is primarily a subject with which the medical profession has to deal, even though the legislative and executive arms of our state and national governments must so often come into action to force out the blessings of narcotics from becoming curses.

As president of the California Board of Medical Examiners, Doctor Phillips has had an unusually broad experience with the workings of antinarcotic statutes, and his viewpoints and conclusions are therefore of more than average value.

His contribution on this important subject is worthy of perusal and thought by members of the medical and legal professions, and by all laymen who have at heart the welfare of the state and of its citizens.

Doctor Phillips in this paper has performed a real service for the state of California, and one that should make for better things in the days to come.

MAKING SURGEONS—NOT THROUGH TRAINING, BUT BY LEGISLATION!

Two proposed legislative measures, one federal, the other state would seem to justify a caption such as heads these comments.

The first or federal measure is a proposed bill introduced into Congress by United States Senator Royal Copeland of New York, and having as its presumable major purpose the passage of a medical practice act for the District of Columbia. From the criticisms which have been placed thereon by the authorities of the American Medical Association it is evidently a loosely drawn measure that will lead to trouble without end; not only for the medical profession and the lay citizens of the District, but also to organized medicine and to lay citizens of the different states of the Union.

* * *

After the many years of experience with medical practice acts throughout the United States, it seems strange that a bill should be proposed for consideration by the Congress of the United States that has so many defects as seemingly exist in this measure.

The outstanding public health menace which the proposed law contains may be said to be that clause which is so drawn, either through omission or commission, that its provisions are not limited to the geographical domain of the District of Columbia. Consequently there is a possibility of its being interpreted by the courts as having the force of a law applicable not only to governmental agencies in that District, but to all other domains of the United States, on land or on sea.

In this clause it is stated that "the degrees doctor of medicine and doctor of osteopathy shall be accorded the same rights and privileges under governmental regulations."

In other words, the present governmental regulations regarding previous professional education and training, now applicable to the medical corps of the United States Army, Navy, and Public Health services, would all be waived. Under such conditions osteopaths of lesser training would be eligible to all positions and emoluments in those public services. Or to put it otherwise, a cultist practitioner of the healing art, with little or no special training in surgery, becomes eligible to hold a position as a surgeon in these services, and to be started on his career of advancement by the seniority rules of these services. If this is not making surgeons by legislation, what is it?

* * *

Let us turn now from the Congress of the United States and its ward, the District of Columbia, to the great state of California. Here we can make note of what a proposed initiative, to be voted on in the state election of November of this year 1928, proposes to enact. This initiative would confer by legislation, privileges somewhat analogous to those in the proposed federal bill just considered.

This California measure here referred to is an initiative sponsored by the practitioners of the healing art who are known as chiropractors. The chiropractors through one initiative now on the California law books, and which received the sanction of the people of California several years ago, divorced themselves from the state medical examining board. With their own board, in this brief

period they have already licensed in California more than 2300 members to practice their methods of diagnosis and healing.

* * *

If the plans of this proposed chiropractic initiative are carried out according to the digest that has come to our attention, it will provide in Section 15d that "Licentiates under this act shall not be discriminated against in favor of other classes of practitioners in the handling of any matters pertaining to the public health."

* * *

So here again by initiative act, a group of practitioners whose standards of education are now far below that of nonsectarian practitioners, and which only a few years ago were much more so, would presumably come into possession of full rights and privileges to all public health powers and positions in California. At present such powers and positions are limited to those practitioners of the healing art duly licensed by the state as possessing credentials indicative of adequate preliminary education and professional training.

In this proposed initiative these chiropractor practitioners have the temerity to ask the people of the state to grant them through law these grave privileges and responsibilities which, it stands to reason, can only be safely acquired through proper preliminary education and adequate professional training. Other sections in the bill of similar nature would be equally detrimental to proper educational and professional standards as we understand those standards.

* * *

This chiropractor initiative would certainly seem to partake of the nature of class legislation, since it gives privileges which other laws grant to other citizens only under vastly more stringent exactions. Yet, if the initiative is favorably voted upon by the citizens of California, it is a question whether it would not be construed by the courts to be constitutional.

* * *

This initiative is one of the proposed laws which the officers of the state association and its component county units should closely watch. If when the initiative is distributed for signatures it is found that its provisions turn out to be as lax and as inimical to the public health interests of California, as we are led to believe they are, then the California Medical Association and its component county societies must decide whether or not they will remain passive or active while the agitation for its passage goes on. It it should be desirable that we should oppose the measure, then ways and means must be devised, so that the voters of California may be adequately informed of the effects which such a law would have on public health standards. To do less than that would be to disregard our responsibilities and obligations to be militant on all matters that make for an adequate protection of the public health.

EXCESSIVE FUNERAL COSTS

Recent investigations of burial costs of human beings in the United States seem to indicate that the statement which is occasionally heard, that it would seem to be cheaper to die than to live, must be reconsidered.

A somewhat painstaking survey of funeral costs in America has shown that burial expenses nowadays, in common with other expenses (not excepting in instances the cost of medical and surgical care) are tending to reach figures either excessive or quite out of proportion to the financial means of a considerable number of citizens.

The survey referred to was conducted under the supervision of a committee of some fifty citizens of the United States, and was made possible in good part through an appropriation of $25,000 from the Metropolitan Life Insurance Company. The committee had on its roster, well-known representatives of the medical, legal, ministerial, and journalistic professions, as well as social service workers and funeral directors. California was represented by Dr. Ray Lyman Wilbur of Stanford. The director of the survey was John C. Gebhart, who in addition to the booklet giving a summary of the committee's investigations, will later bring off a more detailed report from the press of the G. P. Putnams Sons of New York.

* * *

The conclusions drawn were based largely on an analysis of some 15,000 funeral bills representing different economic groups from various sections of the United States.

Among some of the interesting facts which were established through the survey may be cited the following:

The average costs of funerals for all classes of population were: in Chicago, $460; in New York, $772.

The average costs of funerals for all classes of population in different states were: North Caroline, $190 (this was the lowest average); New Jersey, $484; for all states represented, $363.

The average costs of funerals for all classes of population, for communities of different size, were: for cities under 10,000 population, $241; for cities between 10,000 and 250,000 population, $270; for cities over 250,000 population, $336. The average cost of funeral expenses in eastern cities was somewhat higher than that of western cities.

The average costs of funerals for certain races were: for the Irish, $452; for the Italians, $421; for the orthodox Jews, $247.

The cost in New York for single graves ran from $40 to $140; for family burial plots from $200 to $10,000.

The average wholesale cost of burial merchandise per funeral in the year 1889 was $10.11; by 1925 this figure had risen to $51.89.

In estates having less than $1000 it was found for New York City that the burial costs absorbed about 52 per cent of whatever constituted such

estates; whereas in estates of over $100,000 less than 1 per cent of such estates was absorbed by funeral expenses.

London with over 7,000,000 population has some 800 undertakers; New York with some 6,000,000 population has 2000 undertakers.

In the United States, since 1920, there has been a 51 per cent increase in the number of funeral directors; this figure representing for the undertakers an increase twenty times more than the increase in the number of deaths in that period.

The average number of funerals per year for each undertaker was about fifty-six funerals.

* * *

The figures just given should be of interest to all of us, even though most of us dislike to discuss the kind of funeral we desire for ourselves, just as many of us dislike to make wills; on the presumption, possibly, that while other human beings die, we shall go on living for years to come. However, some of the reluctance to talk of these things may be partly dependent on what might be called a superstitious feeling to which most of us must acknowledge, that a discussion of our own death may be bad luck that could tend to hasten our deaths.

Be these things as they may, we must acknowledge that it is a great misfortune that in the family groups of our industrial workers of estates of $1000 and less, some 52 per cent of such estates should be absorbed by funeral expenses.

* * *

These high costs of burials are reflected in Europe, but the nations of that continent some years ago recognized the necessity of intervention in these matters, as witness the following:

Switzerland led the way in establishing communal burial service, and its cities, since 1890, in municipally owned cemeteries, give free burial service along simple lines for rich and poor alike.

Some German and Italian cities offer different grades of communal funeral service; prices for such in Munich ranging from $15 to $175.

French cities can offer communal burial service direct, or types of funerals through a concessionaire, as many as eight grades of such funeral service being offered.

* * *

Funeral customs in the United States have changed considerably in recent years. The undertaker is now often known as a funeral director or a mortician. When death comes into a home the body of the deceased member of the family is promptly taken to a funeral chapel or parlor. Some of these establishments in their embalming and preparation rooms surround themselves with many of the accessories of modern hospital operating rooms. Then there are rest or meditation or quiet rooms, where the body reposes until taken into the chapel for the final services.

It stands to reason that all these newer procedures, with their increased overhead, necessitate increased expense and make for higher costs in burial service.

It cannot be denied, however, that in the hour of sorrow when death enters a household all sense of application of trade principles to learn whether the burial costs proposed by a funeral director are legitimate is usually forgotten, for fear that such investigation might be construed as disrespect to the memory of the deceased relative. It is unfortunate that this striving to show respect to a dead member of the family, no matter at what cost, finds in one sense more intense expression among those of slender economic resources than among the well-to-do.

It is gratifying to know that the need of reform has been recognized on their own account by funeral directors, and that a group of the better known members have formed an association that is working for results which this survey has called attention to as being desirable.

* * *

In the medical profession we have members who at times charge fees so excessive in proportion to the means of the family units receiving the services, or so out of proportion to the general average of fees of fellow practitioners of equal ability and reputation, that they bring our entire fraternity into disrepute in the eyes of all lay citizens who hear of such practices. On that account we are not in position to criticize the undertakers too severely.

On the other hand, as physicians we officiate in the last illnesses of the great majority of our lay fellows to whom death in due time comes. Those professional services, faithfully and generously rendered, are only too often not paid for, because the family group, being led to spend so much more than it should for the funeral arrangements, has practically no money to pay the physician the fees which he faithfully earned.

Therefore, as a general study in sociology having a somewhat close relation to our profession, and as a special study in medical economics, the whole subject of funeral costs should be of considerable interest to physicians. That is why the subject is here discussed.

A Government Hospital for New England—A million dollars for a new hospital for veterans to be located in southern New England has been approved by the Committee on World War Veterans' Legislation of the House of Representatives, as has also $300,000 for the existing hospital at Bedford, Massachusetts. These sums are part of a $15,000,000 program which was to be embodied in a bill prepared by Congresswoman Edith N. Rogers of Massachusetts, who is now chairman of the subcommittee on hospitalization. There will be another new hospital in Kentucky, also costing a million dollars.—*New England J. Med.*

When Infantile Paralysis Is Epidemic—Dr. Charles H. Mayo says that it is futile to attempt to run away from infantile paralysis after the epidemic begins, because recent experiments have shown that at such a time the germs of the disease exist in the throats of almost all children and of many adults, most of whom never show any signs of the sickness. "The best thing to do," he says, "is to remain at home, guard the children against overfatigue and indiscretions of diet, give them a little extra rest during the day, and watch their temperature."—*U. S. Department of Labor.*

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members.

Metabolism

Vascular Hypertension: A Significant Contribution to Its Pathogenesis—Clinicians welcome all notable contributions to the study of vascular hypertension because this condition is encountered so frequently, and its management presents one of the most unsatisfactory and difficult problems of cardiovascular disease. Despite the vast number of investigations directed to determine the underlying cause or causes of hypertensive cardiovascular disease, it cannot be said that its etiology has been discovered, although many factors such as mental and physical strain, infection, and metabolic and endocrine disturbances are believed to be contributory factors of this vascular reaction. Now, just at a time when it appeared that all fundamental anatomic-pathologic studies of this condition were exhausted, there is submitted by two Baltimore workers an investigation along these lines which promises to add definitely to our knowledge of hypertension.

Bordley and Baker [1] began their study with the premises contained in "Cushing's law," *i. e.*, "that an increase of the intracranial tension occasions a rise in the blood pressure which tends to find a level slightly above that of the pressure exerted against the medulla." Cushing felt that this increase in blood pressure was brought about by the vasomotor center in an effort to prevent anemia of the medulla oblongata; that it was, in other words, an expression of urgent necessity for the preservation of the medullary centers. The English physiologist, Starling,[2 3] recently published some important experimental work suggesting that vascular lesions in the medulla, which would impair the blood supply, could produce a compensatory rise of blood pressure and, further, that the causation of hyperpiesia must first be sought in the vasomotor center.

The Baltimore workers above mentioned set out with the idea that it might be possible to explain the more or less chronic states of arterial hypertension so frequently associated with arteriosclerotic changes upon the basis of a localization of these changes in the region of the vasomotor center. Such changes could readily account for a reduction of the blood supply to this center, and lead to a compensatory increase in the arterial tension comparable to that which Starling had produced experimentally in dogs.

The material studied consisted of two groups of cases that had come to autopsy in the pathological department of the Johns Hopkins University, each with a relatively equal amount of arteriosclerosis. The first group had presented clinically a definitely elevated level of blood pressure as observed over a considerable period of time, whereas the second group presented in their clinical course normal or low blood pressure. The anatomic conditions in the vessels supplying the vasomotor center was then compared in the two groups. For this study the location of the vasomotor center was assumed to lie between the obex and the middle on the pons. The two groups comprised twenty-four cases, which were studied carefully both by the gross and the microscopic methods. Of these, fourteen belonged to the first or hypertension group, and ten to the second or normal, or low blood pressure group. The results of this anatomic study brought out the significant fact that arteriolar changes within the medulla, although found constantly among the hypertension cases, are completely lacking among the cases with normal blood pressure. As a rule the larger arterioles are more likely to show intimal and the smaller ones medial changes.

This establishment of a constant association between structural changes in the arterioles supplying the medulla oblongata and persistent states of arterial hypertension has important significance and has not been demonstrated previously. The present writers, however, were not the first to call attention to the frequency with which arteriolar changes within the cranial cavity are associated with high blood pressure. Gull and Sutton, more than fifty years ago, described arteriolar pial changes in chronic Bright's disease and coined the term by which this process in the tiny arteries has since been known, namely, "arteriocapillary fibrosis." In 1924 O'Hare and Walker, approaching the study of hypertension from the clinical side, emphasized two groups of arteriosclerotic patients, the first showing retinal sclerosis and high blood pressure, and the second, with no retinal sclerosis and no increase in the blood pressure.

The Baltimore investigators recognize that there are some very definite objections to their views. The most obvious objection promptly comes to mind. Could it not be said that arteriolar changes are the result of a compensatory reaction due to the strain of a persistently increased pressure? The controversy as to whether arteriosclerosis is a primary or secondary phenomenon in chronic hypertensive conditions seems to be an endless one, and now after many years of investigation still remains unsettled. Therefore this objection cannot possibly be refuted. Another objection suggests the possibility that the changes observed in the brain may be only a part of a generalized arteriosclerosis which itself would be capable of raising the blood pressure. Their answer to this

is, that there is no evidence that arteriosclerosis is ever, except in the rarest instances, a generalized process. It is maintained that arteriosclerosis in most cases of persistent hypertension is not a widespread process but rather appears to exhibit a predilection for certain organs, while others are left relatively or totally uninvolved. In all the cases which were found to exhibit sustained hypertension, variable degrees of arteriosclerosis of the kidneys were found, as well as arteriosclerosis of the medulla. Therefore, if hypertension is to be ascribed to the mechanical interference or arteriolar constriction, the vascular changes in the brain, and in most cases the kidney, must constitute, at least to a great extent, the adequate obstruction.

In concluding, it is stated that the investigation has not contributed anything to the etiology of the disease, but merely offers an anatomic explanation, supported by experimental facts, for the persistent elevation of blood pressure.

The appendix presents the detailed protocols, including the clinical histories and an epitome of the salient gross and microscopic autopsy findings, of the twenty-four cases on which the work is based.

A careful study of this paper leaves one with the impression that something concrete has been added to our knowledge of hypertension in that a correlation between clinical hypertension and arteriosclerosis of the medullary vessels is regularly shown to exist, whereas arteriosclerotic cases with normal blood pressure fail to reveal marked anatomic vascular alterations in the medulla. To my knowledge, this point has never been demonstrated before, and it may lead to a further elucidation of this complex problem.

ERNEST S. DU BRAY, San Francisco.

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Dermatology

Eczema and Disturbed Carbohydrate Metabolism—Considerable attention has been focused recently on the association between certain cases of eczema and a disturbed carbohydrate metabolism. More and more eczema is coming to be regarded as a symptom rather than a disease entity—a symptom due to a variety of possible causes. There is just as much evidence to show that some cases of eczema are due to an intolerance to sugar, as that certain other cases are due to protein sensitization, and others to external irritating agents.

A number of investigators have definitely established the fact that hyperglycemia occurs in patients with eczema more frequently than in normal individuals. Usher and Rabinowitch [1] have attacked the problem from a new angle, by studying the amount and the rate of sugar elimination in the sweat of normal individuals as compared with patients having eczema. The sweat was collected by placing the patient between rubber sheets. Sweating was induced by hot water bottles, blankets, and the subcutaneous administration of pilocarpin.

Glucose was found to be a normal constituent of sweat. In six normal persons, in a test lasting one hour, an average of 18 mg. of glucose per 100 cc. of sweat was eliminated; the average rate of excretion was 18 mg. of glucose per hour. The rate of glucose excretion was found to be definitely increased in cases of eczema in which the tolerance for sugar was lowered as revealed by a glucose tolerance test. The total volume of sweat was also increased in such cases. A group of eight patients with eczema and a normal tolerance for sugar did not display any deviation from normal, either in the amount or the rate of glucose elimination in the sweat.

The authors believe that their findings suggest a causal relationship between the excretion of sugar in the sweat and certain cases of eczema.

SAMUEL AYRES JR., Los Angeles.

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Medicine

A Rational Viewpoint of the Significance of Skin Tests—Given an active extract and a favorable technique, the skin test has its definite usefulness among our diagnostic procedures. The limits of this usefulness are rather sharply defined. For one division of the general group of diseases exhibiting human hypersensitiveness, skin testing has a well known, established and definite value. This group is made up principally of the hay fevers, asthmas and a few of their concomitant skin eruptions.

A positive skin test is only the first step in the diagnosis. The second step is the proving of the contact, and that the patient reacts with each contact. We must never lose sight of the clinical facts to make a harmonious, logical, "cause and effect" relationship.

Because of the spectacular results in this group, the skin test has been carried over to other diseases of the group exhibiting human hypersensitiveness, with indefinite, sometimes misleading and often disappointing results. The reason for these failures is not difficult to understand when we analyze our positive reactions in the light of their clinical relationship. The skin test is essentially an immediate reaction. There is a growing consensus of opinion that the so-called delayed reactions are due to contamination. At any rate we depend largely on the immediate reaction. Given a case, for example, where it is known clinically that a hypersensitive manifestation occurs imme-

diately after a meal, we have a right to expect a whole food extract to give us an immediate positive skin test. But on the other hand, given a case known clinically to give rise to a delayed hypersensitive manifestation, which might imply that during the process of digestion some of the digestive products lead to hypersensitive manifestations, we have no right to expect a whole food extract to give us an immediate positive skin test; and since digestion does not occur in the tissues we should not look forward to a delayed skin reaction. When we use the skin test, then, to bring out the relationships that are not obvious clinically, we must realize here, as well, that we can only expect to pick up the immediate hypersensitive manifestations with our present-day whole food extracts. This limits the usefulness of our skin tests to food extracts.

In the groups of hay fever and asthma we are indebted to Cooke of Cornell for proving that the inhalants are of predominating etiological importance. The inhalants that are guilty must be dissolved in the mucous membrane solutions, where the factor of digestion does not play any part. We are indebted to Coca of Cornell for furnishing us active extracts in imitation mucous membrane solution. So we do have at our disposal active extracts in the inhalant group, which is the most important division in the possible etiological factors for our hay fevers and asthmas.

We must be thankful for the advances made in the usefulness of skin testing for this limited group, and we look forward to the future for the development of satisfactory extracts of foods, of drugs and of bacteria which will enable us to skin test our patients with clinical manifestations.

EDWARD MATZGER, San Francisco.

Urology

Treatment of Renal Tuberculosis—Two recent publications have appeared in the same number of the *British Medical Journal* pertaining to some points of general interest in the treatment of renal tuberculosis. There has been a prolonged dispute in medical literature about many points of pathogenesis of renal tuberculosis.

Pathologic studies of Hallé are probably more fundamental than any, recognizing a distinct hematogenous type of infection in contradistinction to a lymphogenous, and a third in which there is a mixed infection of these two sources of origin. But whether the tubercle bacillus causing the primary focus first lodges in a capillary in some portion of the kidney or in some portion of a tubule or in the pelvis remains unsettled. Some pathologists maintain that the tubercle bacillus lodges in the glomerulus as a small embolus and spreads from this point, others that it lodges in one of the small radicles of the secondary capillary system, usually in a papilla, while still others maintain that it gains a foothold in some portion of the tubule after having been filtered through Bowman's capsule.

Hallé believes that many infections occur by way of the lymphatics of the kidney, spreading from the hilus to the pelvic mucosa, and that others come by way of the blood stream, lodging in the parenchyma and that there are cases in which there is a mixed type of infection. From purely theoretical grounds it would seem reasonable to expect in either case that the exposure of each kidney would be equal and, if this is true, that the majority of tuberculous infections of the kidney would be bilateral. There are still a few who believe that the kidney is incapable of excreting live organisms without being injured thereby, in spite of the mass of accumulated evidence to the contrary. In almost all infectious diseases at the height of infection, such as typhoid fever, pneumonia, etc., pathogenic organisms specific of the infection can be repeatedly cultivated from the urine and there is a great deal of experimental evidence to the same effect, namely, that the healthy Bowman's capsule is capable of filtering live organisms without being injured just as it can filter other solid particles such as indigocarmin. Autopsy records seem to support the theoretical assumption that the tubercle bacillus attacks the kidney bilaterally inasmuch as autopsy records of individuals dying of tuberculosis show as much or more than 50 per cent bilateral involvement.

Recently an interesting pathologic study by Medlar appeared [1] in which the author examined by serial section a number of kidneys of individuals dying of tuberculosis, finding pathologic and microscopic evidence of tuberculosis in practically all the kidneys. Some of these involvements were very minute and apparently healed, but led the author to the conclusion that tuberculosis in all instances is bilateral. If these ideas of pathogenesis, therefore, are correct, the only conclusion is that many tuberculous lesions of the kidney heal, because the clinical evidence is very much contrary to the pathological. Clinically more than 86 per cent of the cases of tuberculosis of the kidney are definitely unilateral and it is upon this fact that the argument for immediate nephrectomy in such cases is based. Furthermore, clinically about 70 per cent of all cases of renal tuberculosis are primary in the kidney; that is, there is no clinical evidence of any active tuberculosis elsewhere in the body.

The more recent favorable results in tuberculosis of other parts of the body following heliotherapy have led many to assume that this treatment applied to renal tuberculosis would be likewise favorable. Thompson Walker,[2] however, states that in his experience renal tuberculosis cannot be cured by exposure of the patient to sunlight. Cases in which pus and tubercle bacilli have disappeared from the urine after such treatment are no proof of healing of the tuberculous lesion in the kidney. Such temporary occlusion of a tuberculous focus is known to take place without this treatment, but it is also well known that sooner or later there is reactivation of the process, with ultimately complete destruction of the kidney. The only recognized clinical cure in renal tuberculosis is with complete destruction of the kidney by the process of so-called autonephrectomy. The temporary improvement that may follow heliotherapy is moreover unfortunate because

it often encourages the patient to resist surgical treatment, or to postpone it and thus lose much valuable time. There can be no question but that heliotherapy is a valuable postoperative adjunct in the care of renal tuberculosis; and it has also a useful field in those advanced cases in which operation is contraindicated but, according to this experienced urologist, should never be relied on to replace treatment by operation when such treatment is indicated.

Fullerton [3] in the same journal reviews statistics in support of the view that operation remains the most hopeful and curative method of treatment in tuberculosis of the kidney and that the best results follow early nephrectomy, before deep ulceration has taken place in the bladder or before there has been spread of the disease elsewhere in the urinary tract. Even in late cases statistics show quite definitely that if the other kidney is sound the patient still may be cured. These statistics, furthermore, are based upon the sound assumption that cure cannot be considered until a period of at least ten years has elapsed from the time of nephrectomy and even this may be too short a period. But the case has now become a problem in general tuberculosis, as it is well recognized that renal tuberculosis in the final analysis is always a secondary disease, coming from some primary focus elsewhere in the body, usually the lungs or bronchial lymph glands; so that every case, even after nephrectomy, should be kept under observation and given treatment with sunlight, tuberculin, and other methods just as are all arrested or healed cases of pulmonary tuberculosis.

FRANK HINMAN, San Francisco.

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Surgery

About Acute Intra-Abdominal Conditions—The physician in general practice usually is the first to see patients who need emergency surgery.

An acute intra-abdominal condition always is a serious matter, the successful limitation of which depends largely upon the promptness and accuracy of the diagnosis.

The first physician called, frequently without delay, must render an opinion which will either give the patient the best chance for recovery, or which may complicate this chance. The physician is often so placed that helpful consultation, or adequate laboratory aids, are not immediately available, but through a process of elimination and the laws of probability he should be ready to give sound, definite advice. By a careful consideration of the history, the onset of symptoms and the findings, a fairly high percentage of correct diagnoses can be made in acute intra-abdominal conditions at the first visit.

One may be convinced that the trouble is the onset of some serious abdominal condition though the exact diagnosis be still in doubt. Therefore it is good practice to move such a patient at once to a place where hospital facilities are available for a full study of the patient's condition.

In such cases, so long as there is doubt of the diagnosis, the use of opiates, which mask the symptoms and thereby limit the chances of recovery, should be avoided.

To avoid error, diseases that may exist outside the abdomen and yet simulate intra-abdominal conditions should be eliminated. This group includes pneumonia, renal colic, external strangulated hernia, acute pyelitis, spinal cord disease, typhoid fever, influenza, uremia, and Pott's disease.

The general appearance of the patient offers evidence of the seriousness of the condition. A study of the history and mode of onset of the symptoms and the length of time certain symptoms have existed and their order of onset will offer additional valuable aid in arriving at a diagnosis.

Most patients who were previously well, or who give a history of somewhat similar short attacks, if found with a severe pain that has existed for a few hours, with or without vomiting, or with rigidity of the abdominal muscles, require prompt decision as to whether or not immediate surgical interference is wise.

That most important symptom, *pain,* should be carefully studied as to its location at the onset, its present location, where referred, and the time of its onset in relation to other symptoms. The usual and unusual locations of abdominal organs must be considered. If the temperature is high at the time of the onset of pain, it is advisable to search carefully for the source of the trouble outside the abdomen.

If the degree of shock is severe, with no marked rigidity of muscles and a history of only slight pain, internal hemorrhage must be considered and the patient examined for its possible source.

If the initial pains were sudden and very severe, with early marked rigidity of the abdominal muscles, perforation of a hollow viscus or acute pancreatitis become possibilities.

When a history of local tenderness of recent duration has subsided suddenly, to be followed by more or less general abdominal pain, a ruptured abscess with the onset of peritonitis must not be overlooked.

In a general way the elevated pulse is of more importance than a rise of temperature, and the onset of severe vomiting, associated with other important symptoms, often means neglect on the part of the patient, his friends, or perhaps the physician.

Sometimes the evidence is so uncertain or confusing that an exact diagnosis is impossible. It is well to remember that if an acute condition exists in the abdomen an early exploratory operation will save more lives than will be saved by the delay essential for exacting diagnostic procedures.

FOSTER K. COLLINS, Los Angeles.

STATE MEDICAL ASSOCIATIONS

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OFFICIAL NOTICE

Proposed Survey of Maternal Deaths—The Bureau of Child Hygiene of the State Department of Public Health is planning a survey to ascertain the cause of maternal deaths in California. The survey is to be made among the members of the California Medical Association and the report and any publicity given thereon will first be approved by the Council of the California Medical Association.

The California Medical Association is in sympathy with the proposed survey of the Bureau of Child Hygiene and the motive underlying—the elimination of preventable causes of maternal deaths.

COMPONENT COUNTY SOCIETIES

ALAMEDA COUNTY

The regular meeting of the Alameda County Medical Association was held March 19 at the Ethel Moore Memorial Building, with Dr. J. L. Lohse in the chair.

The program was prepared and presented by members of the staff of Fabiola Hospital.

The first on the program was a paper by Dr. Claire Rasor on the "Surgical Treatment of Biliary Cases." Doctor Rasor reported three cases of advanced biliary tract disease reviewing the highlights in the diagnosis and pathology of this condition, outlining the laboratory and x-ray examination of particular value. Doctor Rasor emphasized the preparation of the patient for this type of surgery, calling attention to the tendency to hemorrhage and pointing out the necessity for the administration of calcium in jaundice cases in which there is a low calcium. He also stressed the importance of the fact that toxic cases should be given fluids freely and careful checks of kidney function made in order to insure operative success. In the surgical procedure itself the doctor emphasized the advantages of a long incision, careful sharp dissection of adhesions and careful survey of the liver, gall bladder, common ducts, and pancreas.

Dr. O. R. Etter then spoke upon the "Medical Management of Chronic Cholecystitis and Biliary Tract Infection" reviewing the embryological and anatomical relationship of the liver, gall bladder, pancreas and intestines, emphasizing the fact that varying degrees of hepatitis are associated with cholecystitis as well as with appendicitis, ulcer and pancreatitis, and that, therefore, cholecystitis is usually just a part of a generalized biliary tract infection. For this reason cholecystectomy, since it removes but a part of the infection, is not a cure-all. In cases in which the infection is generalized transduodenal biliary tract drainage and flushing by Lyon's technique, with vaccine therapy, according to the doctor, are valuable therapeutic agents. Doctor Etter then reported a number of cases showing favorable results attained by nonsurgical biliary tract drainage.

Dr. W. F. Holcomb discussed a "Manipulative Treatment of Fractured Os Calcis" with which he has had considerable experience with exceptionally good results and prompt return of the foot to usefulness.

Dr. A. M. Meads discussed the "Interpretation of Pyelograms," outlining normal variations and pointing out the common pathological changes with their interpretations.

Dr. E. N. Ewer reported a case of shoulder presentation with unyielding contraction ring necessitating cesarean section. The patient, age thirty-four, was in her third pregnancy. After the second labor, which was spontaneous, she had had a Webster Baldy shortening of the round ligaments for retroversion. Later a 400 mg. hour radium application had been made in the uterus for menstrual irregularity. Two months after that she became pregnant. The doctor stated that radium as a sterilizing agent is entirely unreliable unless used in amount sufficient to stop menstruation.

The pregnancy progressed uneventfully to term. The membranes ruptured before labor pains began and when the patient was first seen twenty-four hours later there was pain of a continuous character, but not severe. The shoulder could be felt through a rigid bone-like contraction ring, the opening being too small to admit the hand for the purpose of version. It did not yield as some authors say it always will, under deep ether anesthesia. A cesarean was performed and a dead macerated, odorous, eight-pound baby was extracted, and as the uterus appeared to be infected, it was removed.

Vomiting and distention of abdomen was noted within a few hours and continued. Salt and soda enemas caused the expulsion of gas and liquid feces. On the evening of the second day the temperature was 100.4, pulse 128, and the patient was restless and flighty. Gastric lavage was done several times, for the diagnosis was now acute dilatation of the stomach.

By 12 p. m. the patient was irrational and it was impossible to count the pulse. She was then given 1000 cc. 3 per cent sodium chlorid solution under the breast, according to the method of Haden and Orr, to combat the duodenal intoxication due to the paralytic obstruction. This hypertonic salt solution was repeated twice the next day.

The condition of the patient seemed hopeless at the time of the first salt injection, but improvement began immediately and she was able to retain small amounts of food within the next twenty-four hours and convalescence was soon established.

In all obstruction cases the blood chlorids are reduced and at first the condition is one of alkalosis and not acidosis.

A plea was made for proper laboratory tests to distinguish between acidosis and alkalosis. Soda and other remedies to combat acidosis, so commonly given in large quantities in the presence of postoperative vomiting, may be distinctly dangerous if the condition is alkalosis. With present-day methods of preoperative preparation, acidosis is uncommon.

After abdominal section the condition we get is lack of tone in the upper digestive tract musculature, in varying degrees of severity up to complete paralytic ileus, presenting mild or severe symptoms according to the alkalosis present.

In alkalosis the blood chlorids are lowered and the nonprotein nitrogen increased. These tests are reliable and quick of performance and should not be neglected, for effective treatment depends upon exact knowledge of the cause of the vomiting.

GERTRUDE MOORE, *Secretary.*

CONTRA COSTA COUNTY

The society held its April meeting in Richmond at the Abbott Emergency Hospital Saturday evening the 14th, 1928.

Doctor Hely presided, but turned the meeting over to Dr. U. S. Abbott, who spoke enthusiastically about the proposed new hospital for the city of Richmond. All present were called upon for an expression of opinion. Dr. W. W. Cross of Oakland pointed out the many advantages to the general practitioner afforded by an adequately equipped hospital where special consultation with late laboratory methods can be had. Mr. Bollinger, who is promoting the plan, explained the methods by which such an institution might be accomplished. He called upon the society for its support. Mr. John M. Desch of San Francisco, who is working with Mr. Bollinger, spoke of the need of a hospital in Richmond.

Doctors H. D. Neufeld of Bay Point and A. Beede of Walnut Creek were admitted to the Medical Society.

Dr. I. O. Church of Martinez, the new full-time health officer of Contra Costa County, gave an interesting report of the recent epidemic of trichiniasis, stating that there had been a total of sixteen cases with but one fatality. He pointed out that the Government does not officially inspect for trichiniasis.

Upon a motion, Doctor Hely appointed Doctors Abbott, McCullough, and Weil to confer with Mr. Bollinger and to ascertain a more detailed plan of the proposed hospital and to report to the society at a special meeting for its approval.

An after-meeting supper was enjoyed at Martin's Grill.

Members and guests present were: Doctors U. S. Abbott, G. W. Bumgarner, St. John Hely, M. Keser, H. Vestal, H. L. Carpenter, J. M. McCullough, R. Powell, W. A. Rowell, and S. N. Weil. Visitors: Dr. W. W. Cross, Oakland; Dr. W. W. Fraser and Dr. J. Crawford, Richmond; Mr. Bollinger and Mr. J. Desch.

S. N. WEIL, *Secretary.*

FRESNO COUNTY

Dr. L. L. Stanley addressed a dinner meeting of the Fresno County Medical Society at the Hughes Hotel on April 3. He gave an interesting outline of the medical work being carried on at San Quentin, where he has been prison physician for fifteen years.

Spinal anesthesia is in common use there for abdominal surgery, two grains of novocain being used. Over one hundred gastro-enterostomies have been done in this way. Doctor Stanley favors this method because there is no lung irritation and no vomiting. Many interesting studies have been carried on by the prison medical staff. Transplantation of the testicle was done in thirty cases from executed men to senile men. There was considerable improvement in these cases, and the experiment was carried further by using sheep testicular substance. One thousand subjects of various kinds were treated by injections of this protein with varying results—some favorable, especially in cases of asthenia.

Dr. W. W. Cross of Oakland spoke of the high standard of medical work being done at San Quentin. The routine work in the hospital is done almost entirely by inmates, who are trained in laboratory and x-ray technique and nursing. By expert handling when they are first convicted, Doctor Cross believes the great majority of prisoners can be rehabilitated.

These papers were ably discussed by Dr. J. A. Montgomery and Dr. C. P. H. Kjaerbye of Fresno.

JOHN M. FRAWLEY, *Assistant Secretary.*

LOS ANGELES COUNTY

On March 8, under the title, "What the Insurance Carrier wants from the Industrial Surgeon," the Industrial Accident Section of the Los Angeles County Medical Association was addressed by a special committee from the Casualty Insurance Claim Adjustors' Association of Southern California. This committee, at the suggestion of the Industrial Accident Section, was recently appointed to cooperate with surgeons in their relation with insurance carriers in southern California.

The first speaker, referring to the surgeon's first report, emphasized the importance of: (1) An estimate of the disability, and a revision of this estimate if the disability is prolonged. (2) A straight history of the injury without exaggeration. (3) Importance of the kind of case, whether home, office, or hospital. (4) Notation on first report if x-rays were taken.

The second speaker: (1) Carriers encourage the use of consultants where indicated. (2) Give an early estimate of any permanent disability that may result. (3) Give a report pointing out the necessities for any operative procedure that may develop during the course of the case. (4) Phone or write the carrier if the case is at all irregular. (5) Send hernia cases at once to carrier for a statement.

Third speaker: (1) The importance of personal acquaintance between surgeon and claim adjustor. (2) Carriers encourage taking x-rays in new cases and as check-ups where they are indicated. (3) Early Wassermanns where indicated. (4) Surgeon should make an effort to smooth down the prejudiced, disgruntled patient. (5) Bad features of allowing nurse to treat case regularly. Surgeon should supervise frequently. (6) Importance of psychology in handling patients of peculiar mental attitude, especially skull fracture and back injuries. (7) Testimony and reports in public liability cases. Give plain straightforward statements of the facts, regardless of where the liability falls. (8) Importance of complete and detailed records of case, such as who treated it on a given day, unusual points in progress, etc. Such records aid greatly in preventing malingering. (9) Importance of past history in relation to present injury.

An excellent discussion followed during which the adjustors emphasized the importance of more frequent meetings with surgeons to promote personal acquaintance for the mutual improvement of industrial surgery in southern California.

We have arranged for at least one annual joint meeting with the claim adjustors.

THE INDUSTRIAL ACCIDENT SECTION.
FLOYD THURBER, *Secretary-Treasurer.*

ORANGE COUNTY

The regular monthly meeting of the Orange County Medical Association was held in the new staff room of the Orange County General Hospital, April 3.

In an exchange of programs, members of the Riverside County Association presented the following papers on "Goiter":

Type Cases, Pathology, Diagnosis, and Medical Treatment—W. W. Roblee, M. D.

X-Ray Treatment of Goiter—P. F. Thuresson, M. D.

Practical Points in Surgery—C. R. Geith, M. D.

Doctors Wehrly, Burlew, Harwood, and Robertson joined in the discussion of the papers.

F. HAROLD GOBAR, *Secretary.*

SAN BERNARDINO COUNTY

The April meeting of the San Bernardino County Medical Society was held at the San Bernardino County Hospital April 3, at 8 p. m.

The meeting was called to order by the president, Dr. G. G. Moseley, at 8 p. m. Minutes of the previous meeting were read and approved. Announcement was made of the Southern California Medical Association meeting to be held at Santa Barbara. Doctor Curtiss

reported for the committee on the constitution. The subject was further discussed by Doctor Moseley.

The following program was then entered upon:

Address by District Councilor Lyell C. Kinney of San Diego.

A Consideration of Certain Phases of Pyelitis—E. J. Eytinge. Discussion opened by W. F. Pritchard.

Urology and the General Practitioner—R. V. Day of Los Angeles. Discussion opened by I. L. Finkleberg.

There were only thirty-three members present. Meeting adjourned at 10 p. m.

E. J. EYTINGE, *Secretary.*

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SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was held April 5 in the hall of the Medico-Dental Club, 242 North Sutter Street. Dr. John J. Sippy, president, in the chair.

The meeting was called to order at 8:30 p. m., with an attendance of thirty-three. Those present were: Doctors E. A. Arthur, J. W. Barnes, E. L. Blackmun, J. F. Blinn, H. J. Bolinger, H. S. Chapman, Fred J. Conzelmann, J. T. Davison, J. F. Doughty, Linwood Dozier, C. F. English, William Friedberger, P. B. Gallegos, Minerva Goodman, Samuel Hanson, J. P. Hull, L. R. Johnson, H. E. Kaplan, G. H. La Berge, R. T. McGurk; F. G. Maggs, F. S. Marnell, J. E. Nelson, G. H. Rohrbacher, G. H. Sanderson, J. J. Sippy, Margaret H. Smyth, C. V. Thompson, G. J. Vischi, B. F. Walker, Leslie F. Johnson of Marshfield, Oregon; Cameron Haight of Stockton, visitors; and Dr. Ludwig Emge, chief of Stanford University Obstetric and Gynecological Service, San Francisco, guest and speaker of the evening.

The minutes of the previous meeting were read and approved.

A communication from Dr. Etta Gray, state chairman of Public Health, California Federation of Women's Clubs, relative to the resolution favoring the pure milk measure, was read.

Action: Moved by Dr. B. F. Walker, seconded by Dr. J. F. Doughty, that the chair be authorized to appoint a committee of three, the chairman to be a member of the committee. The committee to have authority to draw up the resolution favoring the pure milk measure for the action of the society at its next meeting. Motion carried.

The chair appointed Doctors Minerva Goodman and C. V. Thompson to be associated with him on this committee.

The chair then announced that the next regular meeting of the society conflicted with the state meeting.

Dr. Linwood Dozier moved, seconded by Dr. B. F. Walker, that the program committee obtain, if possible, one of the speakers from the state convention to address the society at the next meeting. Motion carried.

The chair then introduced Dr. Ludwig Emge, who spoke on "The Clinical Significance of Menstrual Disturbances." The speaker briefly related the advantages and disadvantages of the sex hormone and glandular treatment of the various menstrual disturbances, mentioning numberless glandular extracts, many of which are designated by "hifalutin" names, but are of no particular value in the treatment of menstrual disturbances. Painful menstruation or flow disturbances are not so satisfactorily treated as amenorrhea. Amenorrhea does not always mean that the woman is sick. Menstruation is not necessary for a woman to be well, but the absence of menstruation often disturbs them psychically. They should forget about it, and should not be given remedies to induce menstruation. Essential amenorrhea should be left alone, but be sure the amenorrhea is not due to systemic disease. The menopause is not simply an ovarian disturbance; it is a compensatory reaction in the entire organism. Functional hemorrhages in young adults may be helped by thyroid or iodin. In functional hemorrhage at the menopause the pituitary gland extract is very valuable. Galvinism is the best treatment for hyperplastic dysmenorrhea.

The members asked many questions which Doctor Emge answered in a very practical and instructive way.

There being no further business the chair declared the meeting adjourned at 10:30 p. m.

FRED J. CONZELMANN, *Secretary.*

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SAN MATEO COUNTY

On March 22 the San Mateo County Medical Society met at the home of Dr. E. W. Cleary in Burlingame for dinner. Thirty members were present. Following dinner movies of orthopedic and other subjects were shown and a general discussion followed.

The new wing of the Mills Memorial Hospital, which is very complete and modern, has just been opened. Needless to say, we are all very proud of it.

H. WADE MACOMBER, *Secretary.*

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SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara Medical Society was held on Monday evening, March 12, at the Cottage Hospital, with the president, Dr. W. D. Sansum, in the chair.

The paper of the evening, "The X-Ray Demonstration, by Means of the Opaque Meal, of Overlooked and Ordinarily Ignored Lesions of the Cecum, Ileum, and Ascending Colon," by Dr. R. G. Taylor of Los Angeles was most interesting and instructive.

A discussion then followed by Doctors Geyman, Atsatt, Ullmann, Koefod, Means, Lewis, Ryan, Thorner, and Sansum.

At the conclusion of this paper the society went into executive session and Dr. Charles G. Baird of Santa Maria was unanimously elected to membership in the society.

A communication was read from Dr. Rexwald Brown.

Upon the invitation of Doctor Jones of Santa Maria it was moved, seconded and carried, that the society hold their May meeting at Santa Maria and that the Santa Maria doctors be responsible for the program.

There being no further business the meeting adjourned.

* * *

The regular meeting of the Santa Barbara County Medical Society was held in the St. Francis Hospital on Monday evening, April 9, with President Sansum in the chair.

The minutes of the previous meeting were read and approved.

A letter from Doctor Jones of Santa Maria was read in which he stated that he had the program arranged for a dinner meeting at the Santa Maria Inn, in May. President Sansum then urged that every member make a special effort to attend.

Communications from the California Medical Association re industrial medicine were read and questions answered.

The first paper of the evening was given by Dr. J. D. Lewis: "Remarks on Local Anesthesia." The paper was discussed by Doctors Thorner, Koefod, Bakewell, Pierce, Brush, Evans, Wilson, and Means.

The next paper was "Atypical Tuberculosis in Children" by Dr. H. E. Henderson, with illustrating slides. This paper was most interesting and was thoroughly discussed by the membership.

At the close of the meeting Doctor Lewis suggested

the following methods of increasing attendance at the meetings:

1. To have dinner meetings. This was discussed, but no definite action taken.

2. To have the secretary call up each member the morning of the meeting.

There being no further business the meeting adjourned.

W. H. EATON, *Secretary.*

SANTA CRUZ COUNTY

The Santa Cruz County Medical Society met in joint session with the San Lorenzo Valley Chamber of Commerce at the Ben Lomond library on March 28. Dr. Jesse Farmer, chairman of the program committee, introduced the speakers of the evening. Dr. Samuel H. Hurwitz, San Francisco, discussed "The Present-Day Treatment of Asthma and Hay Fever." Dr. John H. Shephard, San Jose, our district councilor, prefaced his paper, "The Goiter Problem," with remarks concerning some of the problems now receiving the attention of the state society. The papers of both of these men were instructive and practical. The members and guests present were unanimous in their approval. The last paper of the evening, "Insanity, Medical and Legal," was presented in a very comprehensive manner by Attorney H. C. Wyckoff, Watsonville. Following the papers, refreshments were enjoyed.

The following were present: Members—Doctors Congdon, Cowden, Hatch, Liles, Randall, Sullivan, P. T. Phillips, H. Watters, Ethel Watters, Woodard. Visitors—Doctors Hurwitz, San Francisco; Shephard, San Jose; J. Harrington, Santa Cruz; and H. C. Wyckoff, Watsonville.

SAMUEL B. RANDALL, *Secretary.*

TULARE COUNTY

The regular meeting of the Tulare County Medical Society was held at Motley's Café in Visalia at 7:30, following the usual dinner at 6:30 p. m.

Members present were: Doctors Rivin, Lipson, Groesbeck, Bond, Seligman, Campbell, Zumwalt, Kohn, Weiss, Seiberth, Preston, Gilbert, Fowler, Ginsburg, Banks, Hicks.

In the absence of the president, Vice-President Seligman presided.

Doctors Donald Fowler of Exeter and H. A. Rivin of Delano were elected to membership in the society.

Dr. Leo P. Bell of the Woodland Clinic was present as our guest and speaker, and gave us an excellent talk illustrated with lantern slides on "The Diagnosis and Treatment of Carcinoma of Rectum and Sigmoid."

Discussion followed.

Meeting adjourned at 10 p. m.

H. G. CAMPBELL, *Secretary.*

VENTURA COUNTY

The regular meeting of the Ventura County Medical Society was held at the clinic building of the county hospital on March 27.

The transfer card of Dr. R. B. Armistead, formerly of Alameda County, was read and accepted by the society. The application of Dr. J. A. King of Ojai was presented and held until next meeting.

It was moved and seconded that the society go on record favoring the passage of a law allowing only certified or pasteurized grade A milk to be distributed for human consumption in California.

The county hospital clinic staff was discussed and suggestions made as to improvements and details of organization.

D. G. CLARK, *Secretary.*

CHANGES IN MEMBERSHIP

New Members

Alameda County—Mabel C. Bennett, Berkeley; Isabel P. Brier, Livermore; Andrew S. Davis, Oakland; Archie W. Henry, San Leandro.

Butte County—W. J. Costar, Jr., Sterling City.

Glenn County—William H. Walker, Willows.

Imperial—O. J. Grundset, Calexico; John D. Keye, Holtville.

Los Angeles—Edward Bak, Hollywood; Martin H. Burge, Mariam Goldwasser, Leland P. Hawkins, Delia A. Lynch, Henry John Merkle, William H. Riley, Henry P. Rover, Los Angeles; Ernest Madison Burns, Huntington Park; Verne Chase Crowl, Home Gardens, Earl William Fetter, Long Beach; Harry O. L. Lindsay, Pasadena; James J. Parsons, Monrovia; Jay G. Roberts, Pomona; J. Russell Van Sickle, Santa Monica.

Orange—Morton N. Carlile, Anaheim.

Riverside—A. D. Wilson, Palm Springs.

San Bernardino—Clement Edward Counter, Mary L. Zener, Loma Linda.

San Diego—Harry E. Breese, Chester R. Brown, Henry Leon Jones, San Diego; William E. Diefenbach, La Jolla; John Henry Mallery, San Fernando.

San Francisco—Harold Mayo Behneman, Thomas W. Cornwall, Lewis Gunther, John V. Leonard, Max L. Polse, Pearl S. Pouppirt, Wesley E. Scott, Morrell Vecki, San Francisco.

Sonoma—Bayley B. Bachelder, Sebastopol; George R. Hubbell, Petaluma.

Yuba-Sutter Counties—Leonard N. Sloan, Yuba City.

Transferred Members

Reo B. Armistead, from Alameda to Ventura County.

James B. Cutter, from Santa Cruz to San Francisco County.

Edward Liston, from Alameda to Santa Clara County.

Edward C. Love, from Contra Costa to Napa County.

Earl L. Lupton, from Sonoma to Los Angeles County.

Frederick H. Oldberg, from Contra Costa to Butte County.

Carlyle M. Pearce, from Placer to Alameda County.

Walter J. Spencer, from Yolo to San Mateo County.

Deaths

Cameron, Howard M. Died at Sacramento, March 21, 1928, age 56 years. Graduate of Medical Department University of California, 1896. Licensed in California, 1896. Doctor Cameron was a member of the Sacramento County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Derham, Vincent C. Died at San Francisco, April 6, 1928 age 42 years. Graduate of Cooper Medical College, California, 1909. Licensed in California, 1909. Doctor Derham was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Goodman, Edwin Wilson. Died at Livermore, April 16, 1928, age 36 years. Graduate of New York Homeopathic Medical College and Flower Hospital, New York, 1914. Licensed in California, 1922. Doctor Goodman was a member of the Alameda County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Tryoler, Adolph. Died at Los Angeles, February 18, 1928, age 58 years. Graduate of Medical Department University of Michigan, Ann Arbor, 1894. Licensed in California, 1903. Doctor Tryoler was a member of the Los Angeles County Medical Association and a Fellow of the American Medical Association.

UTAH STATE MEDICAL ASSOCIATION

W. R. CALDERWOOD, Salt Lake.....President
E. H. SMITH, Ogden.....President-Elect
M. M. CRITCHLOW, Salt Lake.....Secretary
J. U. GIESY, 701 Medical Arts Building, Salt Lake.....
.....Associate Editor for Utah

OFFICIAL NOTICES

Dr. M. M. Critchlow has taken over the duties as secretary of the State Medical Association vice Dr. F. Steele, who has left the state. Doctor Critchlow has long served the Salt Lake County Society, and we feel that he will prove equally diligent in caring for the interests of the state organization.

Dr. B. I. Burns of the University of Utah staff has been appointed to committee on postgraduate work. The doctor is now in the East, and it is hoped that he may contribute largely to the success of the next program.

COMPONENT COUNTY SOCIETIES

SALT LAKE COUNTY

The regular meeting of the Salt Lake County Medical Society was held at the Salt Lake County Hospital, Salt Lake City, Monday, March 12.

The meeting was called to order at 8 p. m. by President William F. Beer. Twenty-eight members and five visitors were present.

The minutes of the previous meeting were read by the secretary, and accepted without correction.

George F. Roberts presented a patient with double otitis media and possible brain abscess, cured by an intravenous injection of mercurochrome.

L. N. Ossman presented a patient with a fracture of the lower end of the femur, which required an open operation. He then presented and discussed three patients with skull fracture, none of whom required operation. He also presented a patient with long-standing osteomyelitis of the femur and discussed the fracture. G. H. Pace discussed the treatment of skull fractures with magnesium sulphate.

M. C. Lindem presented a patient with a bullet wound of the chest, the bullet lodging in the left lung.

Leland Cowan presented a patient upon whom he had operated for a perforated duodenal ulcer, followed later by a gastro-enterostomy, which was complicated by thrombosis of the left femoral artery and resulted in gangrene which required amputation of the limb. Discussed by O. A. Ogilvie and G. H. Pace.

George F. Roberts presented a patient with ulcerative colitis who had a blood picture resembling that seen in pernicious anemia. He also presented two patients with endarteritis obliterans, and a deaf and dumb patient with a cleft palate.

E. R. Murphy showed a ten months old baby with nonsuppurative encephalitis.

G. H. Pace presented a patient with paralysis agitans who had a four plus spinal fluid Wassermann showing improvement under antisyphilitic treatment.

Adjournment at 9:35 p. m., after which refreshments were served.

General discussion by F. E. Straup.

The regular meeting of the Salt Lake County Medical Society was held in the Medical Arts Building, Salt Lake City, Monday, March 26.

Meeting called to order at 8:05 p. m. by President William F. Beer. Fifty-four members and two visitors were present.

Mark Brown showed x-ray films and the pathological specimen of a gastric ulcer.

E. S. Pomeroy demonstrated an instrument called the lacunascope, which he has devised.

John Z. Brown discussed a case of tube abscess with symptoms following childbirth, but no physical findings. Autopsy revealed a ruptured abscess in the anterior surface of the cecum involving the right tube and ovary and causing general peritonitis.

An extremely interesting talk on "The Treatment of Syphilis" was given by C. J. Pearsall. He discussed the various stages and the importance of intensive treatment with arsenic in the first two stages. He discussed the importance of individualism in the treatment of this disease, especially in the third stage. Discussed by William L. Rich, W. G. Schulte, T. A. Flood, George McGregor, G. H. Pace, E. S. Pomeroy, G. G. Richards, and F. B. Steele.

The second paper of the evening was on "Spastic Colitis" by Ralph Tandowsky. He discussed the various types and the dietetic treatment of each. Slides were shown illustrating the results obtained on the various types of the disease. This interesting paper was discussed by G. G. Richards, W. R. Tyndale, J. P. Kerby, S. D. Calonge, and William F. Beer.

Applications for membership signed by T. M. Aldous and R. J. Leutsker were read and turned over to the board of censors.

The secretary read a letter from F. B. Steele, secretary of the Utah State Medical Association, asking for information about malpractice suits.

The secretary read a letter from the Chamber of Commerce relative to a resolution urging the support of a measure now before Congress authorizing appropriations for the establishment and maintenance of mining experiment stations of the United States Bureau of Mines and favoring the establishment of a central western experiment station at Salt Lake City. S. G. Kahn moved that a similar resolution be adopted by the society and the secretary be instructed to communicate with the Senators and Representatives from this state to that effect.

Adjournment at 10:15 p. m.

M. M. CRITCHLOW, *Secretary.*

WEBER COUNTY

The meeting of the Weber County Medical Society was held March 29 at the Hotel Bigelow, President W. R. Brown presiding.

The usual dinner preceded the program. There were forty members present and three members of the Box Elder County Medical Society. The reading of the minutes for the previous meeting was postponed.

Dr. Fuller B. Bailey of Salt Lake City read a very interesting paper on "Diagnosis of Peptic Ulcer." He stressed particularly the need for taking a careful history, making a physical examination and gastric analysis before having an x-ray study. Dr. Martin C. Lindem of Salt Lake City read a paper on "Review of Technique in Abdominal Surgery." He reviewed the fundamentals of surgery and suggested that the surgeon improve his technique, offer the patient more sympathy, provide less hazard in operation, and more comfort during recovery.

These two papers were discussed by Doctors F. Bartlett, E. R. Dumke, and W. H. Budge.

Meeting adjourned.

GEORGE M. FISTER, *Secretary.*

NEWS

The meeting of the Holy Cross Hospital Clinical Association was held the night of March 19 at the hospital.

Clinical cases were presented by Doctors Evans, Wilcox, Cochran, Sugden, and Klein.

Dr. T. A. Flood exhibited pathological specimens.

Next meeting, April 16.

MISCELLANY

From time to time in this department of California and Western Medicine, appear columns grouped under the following headings: Comment on Current and Recent Articles in this Journal; News; Medical Economics; Readers' Forum; California State Board of Health; and California Board of Medical Examiners. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

SPECIAL SUMMER COURSES OF GRADUATE INSTRUCTION

University of California Medical School—Summer courses for graduates in medicine will be offered in the University of California Medical School, San Francisco, June 4 to June 30, 1928.

Various courses will be offered in general medicine, surgery, the specialties, and laboratory subjects. Correspondence is solicited from those who may be interested.

Address: Dean's Office, University of California Medical School, Parnassus and Fourth Avenues, San Francisco.

* * *

Stanford University Medical School—The course will begin on Monday, July 2, and end on Saturday, July 14, 1928. Attention is called to the fact that the beginning date of the course directly follows the closing date (June 30) of the special summer course given by the University of California Medical School. Those who so desire can therefore attend both courses. It will consist of forty lectures and demonstrations, each for a period of one and one-half hours. Two will be given each week-day morning, and two each week-day afternoon excepting Saturday. None will be given on July 4.

The course has been designed to meet the needs and interests of the practitioner and is intended primarily for the man who wishes to review the outstanding advances that have been made in various fields of medical knowledge during recent years. In general it is planned to have the first hour devoted to the lecture or demonstration and the succeeding half hour to informal discussion. There will be a half-hour recess after the first morning session and after the first afternoon session, with an hour recess for lunch. Lectures will begin at 9 a. m. and end at 5 p. m.

The registration fee for the course is $60, payable in advance. Make checks payable to Stanford Medical School. All applications and registration fees should be in the hands of the dean, Stanford University Medical School, 2398 Sacramento Street, San Francisco, on or before June 10, 1928. The Medical Faculty reserves the right, if an insufficient number of applications is received, to return registration fees and cancel arrangements for the course.

Full information regarding this course of lectures may be secured from the dean's office.

Fourth School of Medicine in California—The University of Southern California will open a school of medicine in September which will conform to all requirements essential to a Class A rating, its president, Dr. Rufus B. von Kleinsmid, has announced. At the opening of the school students will be received only for work in the first preclinical year. Each succeeding year an additional year's work will be added until in 1931 the full four-year course is offered.

Medical training at the University of Southern California has been suspended for the past ten years, the old medical school having closed during the World War when a shortage of faculty and students and the vicissitudes of war made such action necessary. Upon reopening, the school will have taken on the character of a new institution. It will be located on the university campus, close to the downtown section of Los Angeles, and during the first two years at least existing classroom and laboratory facilities will be utilized. The university will accept one or more of the offers of Los Angeles hospitals to become teaching centers when the clinical years of medicine are offered.

In formulating its plans for the new medical school the university has the backing of the Los Angeles County Medical Society with more than 1600 members and the membership of the University of Southern California Medical Alumni Association numbering more than 1000. Two committees from each of these associations have jointly undertaken the task of raising $500,000 in five years to provide for the expansion of the school. To make possible the opening of the school the university has set aside for its use $500,000 in endowment. To this will be added the funds subscribed by the medical profession.

The university at present offers premedical training, more than seventy students being registered in these courses at present. Students have prepared and been admitted to Stanford, University of California, Northwestern, Rush, Washington University, Johns Hopkins, and Harvard medical schools.

The only other medical school of a Class A rating in southern California is the College of Medical Evangelists at Loma Linda and Los Angeles. The nearest medical schools are Stanford and the University of California in San Francisco.

The university in its organization of the medical school has been counseled by an executive committee consisting of Dr. Edward M. Pallette, president of the Los Angeles County Medical Society; Dr. W. A. Morrison, chairman of the educational committee of the society; Dr. W. W. Beckett, chairman of the educational committee of the University of Southern California Medical Alumni Association, Dr. Joseph King, and Dr. E. A. Bryant, all of Los Angeles.

The Greens' Ophthalmic Hospital—The medical profession has been invited to visit and inspect the Greens' Ophthalmic Hospital on May 19 and 20, after which it will be opened for admission of patients.

The hospital has been especially built and equipped for the practice of ophthalmology.

A portion of the building has been set aside for the use of a part-pay dispensary for the care of patients of limited means, similar to that conducted by Cornell University.

Annual Meeting of American Association for the Study of Goiter will be held in Denver June 18, 19, and 20. On the morning of June 18 two diagnostic clinics will be held. One at the Denver General Hospital under the direction of Doctors H. S. Plummer and H. S. Haines. The other at the Colorado General Hospital will be conducted by Dr. William D. Haggard.

The afternoon of that day will be given up to a symposium on the etiology and prophylaxis of goiter.

The second morning from 8 until 12 o'clock will be devoted to operative clinics (all goiter) at the several Denver hospitals.

The afternoon sessions of that day will be opened by an address by Prof. Dr. B. Breitner of the Von Eiselberg Clinic, Vienna, Austria. This address will be on "Goiter and Iodin in Animal Experiments."

The papers of the scientific program, about thirty in number, cover particularly every phase of goiter,

and no one interested in this important problem can help but profit by coming to the meeting.

All members of the state and provincial medical societies are eligible, and are cordially invited to participate in the conference as attending members.

New Institute of Research—At a recent meeting of the board of directors of the Desert Sanatorium of Southern Arizona, Inc., a quarter of a million dollars was voted to establish an Institute of Research, and the following directors and officers were elected: Bernard L. Wyatt, M. D., F. A. C. P., director; Roland Davison, M. D., medical director; Daniel T. MacDougal, M. D., research consultant.

The Research Institute of the Desert Sanatorium will devote its activities to the study of the nature of solar radiations and their effects on living matter.

First International Oto-Rhino-Laryngological Congress will meet at Copenhagen, July 29 to 31, 1928.

Any who are interested therein can obtain further information from the American Committee of this Congress, 25 Broadway, Suite 656, New York City, New York.

Members of the staff of the Stanford University Medical School have received the following promotions:

Academic Staff—To assistant professorship in medicine: William Dock, M. D.

To instructorship in medicine: John Kent Lewis, M. D.; Eaton M. MacKay, M. D. (new appointment).

To instructorship in pharmacology: Charles C. Johnson, Ph. D.

Clinical Staff—To clinical professorship in surgery and appointed head of the division of ophthalmology: Hans Barkan, M. D. (ophthalmology).

To associate clinical professorship in medicine: Jay Marion Read, M. D.

To assistant clinical professorship in medicine: Stuart C. Way, M. D. (Dermatology).

To assistant clinical professorship in surgery: Wilber Frank Swett, M. D. (ophthalmology).

To assistant clinical professorship in obstetrics and gynecology: Albert Victor Pettit, M. D.

To clinical instructorship in medicine: Walter Schilling, M. D. (neuropsychiatry); Pleasant A. Taylor, M. D.; Joseph Charles Cuneo, M. D.

To clinical instructorship in surgery: Henry A. R. Kreutzmann, M. D. (genito-urinary).

To clinical instructorship in obstetrics and gynecology: Lewis Michelson, M. D.

Chicago's Radiological Convention—The Radiological Society of North America will hold its fourteenth annual convention in Chicago, December 3 to 7 inclusive, 1928. The Drake Hotel, Lake Shore Drive and North Michigan Avenue, has been selected as the headquarters. We are assured of ample accommodations and exceptionally reasonable rates and of the best and most efficient service.

There are no registration fees, no additional expense. Plans are under way now to secure reduced transportation rates.

Much attention is being given to arranging for scientific and commercial exhibits. These exhibits will afford a postgraduate course of instruction in nearly every branch of medical science. Clinics covering radiological problems as well as other branches of medicine will be given every day during the session. We are assured by the program committee of an instructive and interesting scientific session and a program upon which will appear representative men from all sections of this country and Europe.

Dr. S. A. Kinnier Wilson of London gave the annual address for Alpha Omega Alpha on Saturday morning, April 28, at 10 a. m., in Toland Hall, University of California Hospital, San Francisco.

Presentation of the "Oath of Hippocrates" to the senior students was made by Dr. William J. Kerr.

The "Oath of Hippocrates" was reprinted in an edition of five hundred copies by Taylor & Taylor, San Francisco, 1927, for Dr. William J. Kerr. It is reproduced in broadside in the distinguished form designed and set in Forum types in 1916 by Frederick W. Goudy, printer and letter designer, of Marlborough-on-Hudson, New York, of which he printed 126 copies on a hand press on Kelmscott hand-made paper (the paper used in this reprint O, for Paul B. Hoeber, publisher, of New York City). The Forum types were designed by Goudy following his study at first hand of the beautiful letter forms evolved by the stonecutters of ancient Rome. The translation is taken from that made of the works of Hippocrates by Francis Adams, LL.D., surgeon, first published in 1849 by the Sydenham Society, London, in two volumes, octavo.

The Pacific Coast Oto-Ophthalmological Society held its sixteenth annual session at Santa Barbara on April 18 to 20, inclusive. At the same time the annual meeting of the western section of the American Laryngological Society convened. That organization held its session on April 21.

The meetings were presided over by the president, Dr. William J. Mellinger of Santa Barbara. Among the visiting speakers were Dr. Luther C. Peter of Philadelphia, who discussed "Glaucoma"; Dr. Norval H. Pierce of Chicago, who discussed the "Subepithelial Connection Tissue with the Marrow Spaces."

The meeting was well attended, and in addition to the excellent papers, ample opportunity for entertainment was provided.

Another Public Health Worker Loses His Life in Line of Duty—For more than twenty years the Public Health Service has conducted studies of a very fatal disease which occurs in certain areas in the western states. This disease is known as Rocky Mountain spotted fever. During the course of the investigations made by the Public Health Service, four workers have lost their lives from the disease, contracted in connection with their official duties.

The most recent worker to lose his life from Rocky Mountain spotted fever is A. Leroy Kerlee, who was employed in the Public Health Service laboratory at Hamilton, Montana, as a bacteriologist. He was a recent graduate of the Montana State College, and had been in the Service since September, 1927.

Those who had previously lost their lives in this work are Dr. T. B. McClintic, who died in 1921; W. E. Gettinger, a laboratory assistant who died in 1922; and G. H. Cowan, a field assistant, who died in 1924.

The warfare of science against disease has its hazards. A. Leroy Kerlee made the supreme sacrifice in the battlefield of the laboratory.—*U. S. Public Health Service.*

A Home for the Massachusetts Medical Society—At the last meeting of the Council of the Massachusetts Medical Society a committee was appointed to consider ways and means of acquiring a permanent home for the Massachusetts Medical Society, and to solicit funds to acquire such a home if it deemed it advisable. The committee was empowered to appoint subcommittees from the district societies. This committee has voted that a permanent home in Boston for the society is a most desirable thing and that subcommittees from the district societies should be appointed to raise funds for such a purpose.

At present the offices used by the society are inadequate and the rent paid for them amounts to a considerable sum. The activities of the society, especially of the journal, are increasing rapidly, and en-

larged quarters are imperative. It seems to the committee that it is desirable for the Massachusetts Medical Society to own its own building in Boston. This building would house the offices of the journal and various officers of the society. It would provide adequate room for council and committee meetings and for medical gatherings of various sorts. It would provide definite headquarters for varied medical activities throughout the state and New England. It would serve as headquarters with some advantages of a club for members of the society. Such a building could be made virtually if not actually self-supporting and thus benefit the society. The committee voted to launch a campaign to raise $125,000. For this sum a most desirable building can be purchased and equipped, and provide the nucleus of a sinking or endowment fund. It is the idea of the committee not to limit the amount of money to be raised. Any sum over and above the amount actually to be used for purchase and equipment of the home would be added to the endowment fund.—*New England Journal of Medicine.*

Higher Compensation for Child Injured While Illegally Employed—A boy of fifteen lost his arm in a Cleveland factory while he was working in violation of three provisions of the child labor law, being under sixteen and working at night on a dangerous machine without an employment certificate. The Industrial Commission of Ohio granted him 50 per cent additional compensation over the regular workmen's compensation for this type of injury, for the first time applying to a violation of the child labor law the provision of the constitutional amendment of 1924 empowering the commission to grant additional compensation up to 50 per cent in cases of injury shown to be due to "the failure of the employer to comply with any specific requirement for the protection of the lives, health, or safety of employees enacted by the General Assembly."—*U. S. Department of Labor.*

Grand Rapids Has a Junior Vocational School—This junior vocational school is for retarded children at least fourteen years of age who are not eligible to the regular city vocational schools because they have not completed the eighth grade. The completion of any specific grade is not required. Half of the school day is spent in training in the shop or workroom. It is said to be proving successful with children who are restless and discontented in the regular grades.—*U. S. Department of Labor.*

Oleomargarine—Several bills dealing with oleomargarine have recently been introduced in Congress. Thus H. R. 11848 would place a tax of ten cents a pound on this product when colored in any manner. The reason for this measure is said to be because of present practices in using yellow fat in old cattle to make some makes of oleomargarine resemble butter in appearance. Another bill, H. R. 12246, would forbid any money appropriated for the support of any ward or employee of the government to be expended to purchase oleomargarine, filled milk, or other alleged substitutes for butter. A third bill, S. 3737, would likewise impose taxes on oleomargarine made to look like butter.—*New England J. Med.*

Antivivisection—The ubiquitous antivivisection bill, said to have been inspired by interests in New England, has made its customary appearance in Congress, this time as H. R. 11998. This measure would make it a misdemeanor for any person to operate or experiment on a living dog in the District of Columbia or any Territory, except for the purpose of healing or curing the dog.—*New England J. Med.*

Dr. H. S. Cumming Reappointed Surgeon-General of United States Public Health Service—On January 27, the President sent to the United States Senate the name of Dr. Hugh S. Cumming for reappointment as Surgeon-General of the United States Public Health Service. It was confirmed immediately without the formality of being referred to a committee.

The appointment of Surgeon-General Cumming to succeed himself is sufficient ground in itself for congratulating the people of the country; but there is even a greater reason for felicitation—the fact that the services of one who has proved his worth in the field of public health are appreciated to the extent that no question of replacing him at the expiration of his term of office arises, either in the mind of the President or in the Congress.—*Health News.*

"Vagabonding"—Verily, there is nothing new under the sun. In German universities it has been the custom of students to attend classes "according to their own sweet will." Popular teachers always have a large student attendance on their lectures and demonstrations. There is no university regulation that prescribes whose classes should be attended. A teacher with the lowest rank in the faculty may have the largest student attendance. The final test of proficiency in any subject is the examination, which is taken whenever the student is ready for a test.

Now, word is received that a similar practice, in principle, is in vogue among the students of Harvard University. It has been termed "vagabonding," and refers to attendance on lectures not included in the student's regular courses. Professors are said to encourage it, and every morning the *Crimson* prints a list of lectures of the day that are likely to be of general interest.

Perhaps some medical school may wish to introduce such a plan into its curriculum as a stimulus to its teachers and by way of experiment in medical education. It would represent a wide excursion into the field of election about which much is being said but little done. A near approach is the method employed in the University of Wisconsin Medical School in the department of anatomy. The student is assigned his task and does it when and how he chooses, presenting himself for examination whenever he feels he is ready for it. "Vagabonding" should receive serious thought by medical educators.—*Bull. Association of Am. Med. Colleges.*

READERS' FORUM

Basic Science Acts

Santa Monica, California.
April 16, 1928.

To the Editors:

A multiplicity of licensing boards in any state almost inevitably leads to confusion, conflict of authority, and to a lowering of standards of practitioners of the healing art. It is a well-known human trait that where identical work is to be done by several groups the task is very likely to be neglected.

In the past examiners have devoted much time to ascertaining the preliminary educational requirements of applicants. This work, vital and necessary as it may be, could undoubtedly be better accomplished by another agency, and the professional board devote its energy to determining the degree of skill possessed by the applicants. A well-trained scientific man, regardless of his school of practice, will treat the sick in about the same way and will spend approximately the same amount of time in learning how to do it. The danger to the public lies not so much in difference between schools of practice, as in the deficiencies of practitioners with regard to basic educational requirements.

This situation has been met in Wisconsin, Connecticut, Nebraska, Washington, and Minnesota by the enactment of basic science laws. California is plagued by the existence of multiple boards. The

establishment of a board of basic sciences, to insure that all practitioners of the healing art should have at least a high school education and possibly one or two years of colleges, would do a great deal to protect the sick from exploitation by the ill-trained and incompetent.

The thinking members of the medical profession could do themselves and the public no greater service than to urge the early adoption of such legislation.

LOUIS E. MAHONEY, M. D.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Volume 1, No. 7, May, 1903

From some editorial notes:

. . . The Publication Committee and the editor are very desirous of having as full reports as possible of the meetings and proceedings of the various county

. . . Every member of the state society and every member of a county society—is requested to advise societies throughout the state for publication in the journal. . . .

the journal at once if there is any irregularity in the receipt of the journal by himself or any other member whom he knows. Mistakes in addresses or in county society rolls are bound to occur from time to time, and these can only be corrected when they are called to the attention of the publication office. . . .

From the Report of the Proceedings of the Medical Society of the State of California at its thirty-third annual session held at Potter Hotel, Santa Barbara, April 21-23, 1903:

. . . Dr. F. B. Carpenter then read the annual address of the president, which was as follows: . . .

. . . For the past fifteen years efforts have been made to reorganize the A. M. A. on lines satisfactory to the profession of the country, but, owing to the unwieldiness of a body so large, little actual progress had been made until three years ago, at Atlantic City, when the matter of formulating the manner of doing it was entrusted to a carefully selected committee of three. As a result of their labors there was given to the Association a Constitution and By-Laws which completely remodeled its construction, reorganizing on the plan which makes the state society of each state an integral part of the parent organization.

This reorganization was formally effected two years ago at the St. Paul meeting, and stands today as the foundation upon which is being reared the most colossal organization of medical men which this country has ever known.

In California this society is the integral part of that great fabric, and acting upon the suggestion from the central body, this society ordered the appointment of a large and representative committee, whose duty it should be to present to this society a new Constitution and By-laws, modeled upon the skeleton outlined by the A. M. A. . . .

. . . It is thus seen that only the member of a state society may become a member of the A. M. A., and only a member of a county society may become a member of a state society. . . .

. . . The county societies are reorganized on broader lines, and more liberal policies than heretofore. The aim now is to eliminate personalities and petty jealousies from the local bodies, making it possible for any reputable physician to attain a membership in his county society. This is his due; he has a right to demand it, and only grossly unprofessional acts are intended to debar him from professional association with his neighbors. Personally and socially he may be their associate or not, as circumstances dictate, but if his professional career will bear a fair criticism he should be taken into the fold and made one with his fellows. . . .

. . . Dr. William Watt Kerr, in his address on Medicine, called attention to the very extensive variety of the clinical material to be found on the Pacific Coast, due largely to our relations with the Orient. The advances in the technique of diagnosis were touched upon, and attention called to the many peculiar cases that were heretofore wrongly diagnosed. . . .

. . . The address on Surgery, by Dr. Granville MacGowan of Los Angeles, dealt not with a résumé or encyclopedic account of many questions in surgery, but with a general consideration of the status of surgical work upon the prostate. . . .

. . . Dr. George H. Evans presented his report as secretary, as follows:

. . . At about the time the new constitution and by-laws were ratified, a committee appointed for the purpose by the American Medical Association drew up a constitution for state societies which it was desired all such bodies should adopt, in the interest of uniformity and in order to carry out the general plan of organization of the profession throughout the land. . . .

. . . The membership of the society is as follows:

Affiliated members by county societies:

Alameda	89	
Contra Costa	14	
Fresno	33	
Humboldt	20	
Los Angeles	203	
Marin	10	
Orange	20	
Placer	12	
Riverside	19	
Sacramento	44	
San Diego	19	
San Bernardino	22	
San Francisco	370	
San Joaquin	26	
Santa Clara	28	
Santa Barbara	15	
Yuba and Sutter	11	
		955
Members-at-Large		118
Total active members		1,073
Honorary members	23	
Permanent members	10	
Deceased members	6	
		39
Total year		1,112

From the report of the Memorial Committee, George William Davis, M. D., chairman:

. . . To reward the deserving, and duly recognize modest merit, is the delight of generous hearts; to honor our dead in this memorial hour, is the last tribute with which this society can grace the memory of our departed members. . . .

In Memoriam—Cephas L. Bard

Doctor Cephas L. Bard was one of the prominent physicians of California. . . .

. . . Doctor Bard was a member and president of the Ventura County Society of Pioneers from the year of its organization. He was president of the Ventura County Medical Society. He was an active member of the Medical Society of the State of California, and was unanimously elected its president in 1897. . . .

. . . At Ventura, jointly with his brother, United States Senator Bard, he erected and furnished a hospital in memory of their mother, which was intended to be a gift to his adopted town. The hospital was finished three or four months before his death and was, perhaps, the last public and generous deed of a well-spent life. . . .

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. PINKHAM, M. D.
Secretary of the Board

Charging that the Berkeley Chiropractic College and the Berkeley Chiropractic High School are diploma mills, the state of California, on advice of the State Board of Chiropractic Examiners, yesterday appeared in the court of Judge Trabucco in Oakland asking that the franchise of the institutions be revoked. It is stated in the complaint that the schools are conducted solely for pecuniary purposes and award diplomas without proper examination and without proper courses of study.—*San Francisco Chronicle,* March 23, 1928.

According to reports, Cecelia Bartholomew of San Francisco, recently charged with violation of the Medical Practice Act, had in her possession a diploma issued by the American School of Naturopathy (San Francisco branch); a diploma from the Christian Philosophical Institute, signed by Bishop Leroy Cosper, who some time since served a jail sentence; and a diploma issued by the Spectro-Chrome Institute of America signed Dinshah P. Ghadiali, M. D., whose history was printed in the *A. M. A. Journal* of January 26, 1924, page 321.

The results of the February 1928 examination given by the Board of Medical Examiners show fifty-seven applicants were granted physicians' and surgeons' certificates.

According to recent reports, J. C. Chartier, who conducts a pharmacy in Oakland, pleaded guilty on March 15, 1928, to a charge of violation of the Medical Practice Act and paid a fine of $100. The report relates that Chartier made house calls, treated patients in his drug store, and made use of narcotic registration permit No. 4763, formerly held by Dr. Edward Blair, San Francisco, who is now reported to be in Persia.

According to reports, Shun Gee Chew, San Francisco, Chinese herbalist, who is licensed as a chiropractor based on a diploma issued by the Chiropractic University, Kansas City, Missouri, was recently arrested on a charge of violation of the Medical Practice Act.

According to the San Francisco *Examiner* of April 17, 1928, Governor C. C. Young has appointed on the Chiropractic Board "Dr. Harry P. Fish, Santa Rosa, and Dr. Claude L. Fishback, Fresno, to succeed Dr. Vernon Malcolm, San Francisco, and Dr. Homer B. Skinner, Oroville, terms expired."

Another alleged fraudulent diploma bearing the name of the College of Physicians and Surgeons of San Francisco is reported to have been presented to the Board of Naturopathic Examiners of Oregon by an individual named G. T. O'Sullivan.

A petition for a writ of review in the guardianship proceedings of Mrs. Ernestine Englehart of Oakland was filed here in the State Supreme Court yesterday by Attorney Carl W. Mueller. (*San Francisco Examiner,* March 22, 1928.) ("News Items," December, 1927.)

According to reports, Rose A. G. Fraser, Sacramento, was recently arrested on a charge of violation of the Medical Practice Act. She related that she was graduated from the Buffalo Medical College in 1889, which statement cannot be verified through the records of said institution.

James A. Hadley, whose license to practice medicine was revoked by the State Board of Medical Examiners March 1, today filed a petition for writ of review of the testimony on which he was held guilty of violating the Medical Practice Act.—*San Francisco Call,* March 23, 1928.

According to reports, William Hicks, licensed chiropractor of Los Angeles, on April 5, 1928, pleaded guilty to a violation of the Medical Practice Act and paid a fine of $100, the report relating: "It appears that Hicks not only violated the chiropractic act by practicing beyond the limits of his certificate, but that he also violated the Medical and Optometry acts."

It is reported that on April 6, S. B. Hilf, Los Angeles, was found guilty of violation of the Medical Practice Act and was sentenced to serve ninety days in the city jail, sentence being suspended for two years.

The Board of Medical Examiners by resolution recently forwarded a protest to James Doran, Prohibitioner Commissioner, Washington, D. C., based on the refusal of the Internal Revenue Department to furnish information to the Board of Medical Examiners relative to federal narcotic violations that have been settled in compromise by payment of a specified amount of cash, thereby quashing possible legal proceedings.

R. L. Palmer, licensed chiropractor, El Centro, California, on March 23 is alleged to have pleaded guilty to violation of the Medical Practice Act and to have been fined $200, fine being suspended for two years on condition of no further violation of the state Medical Practice Act.

According to a press dispatch dated Fresno, April 14, published in the San Francisco *Chronicle* of April 15: "Motion of the state medical board to have dismissed the application of Dr. Carl H. McPheeters for a writ reviewing its action in revoking his license on the ground that he betrayed professional secrets was taken under advisement yesterday by Superior Judge Charles Bernard. The court continued the return of the petition to May 4. McPheeters also is facing a charge of sending obscene matter through the mail."

Dr. George H. Norris, wanted for the attempted murder of a wealthy widow in San Francisco five years ago, has been captured in Detroit.—*San Francisco Examiner,* March 29, 1928.

Exonerated of all blame for the death of Miss Elizabeth Brown, February 22, Municipal Judge William S. Baird yesterday dismissed the murder complaint against Dr. Eliphalet Patee after taking the matter under advisement for five days.—*Los Angeles Illustrated Daily News,* March 20, 1928.

According to the Ventura *Free Press* of March 16, 1928, Dr. Allen Peek, who on an affidavit filed by Earl Bell, police lieutenant, was held for hearing, was adjudged sane after a hearing held by five local physicians, it being related that "Doctor Peek was arrested by Earl Bell Monday night after it was reported he had been seen prowling about his office with a revolver in his hand."

According to reports, a lecturer named Clanton Thomas, 964 Market Street, San Francisco, was recently arrested on a charge of violation of the Medical Practice Act, he being reported, among other things, as distributing a pamphlet under the name of the "Better Race Society," 426 San Fernando Building, Los Angeles; and also published by the "Better Health Society."